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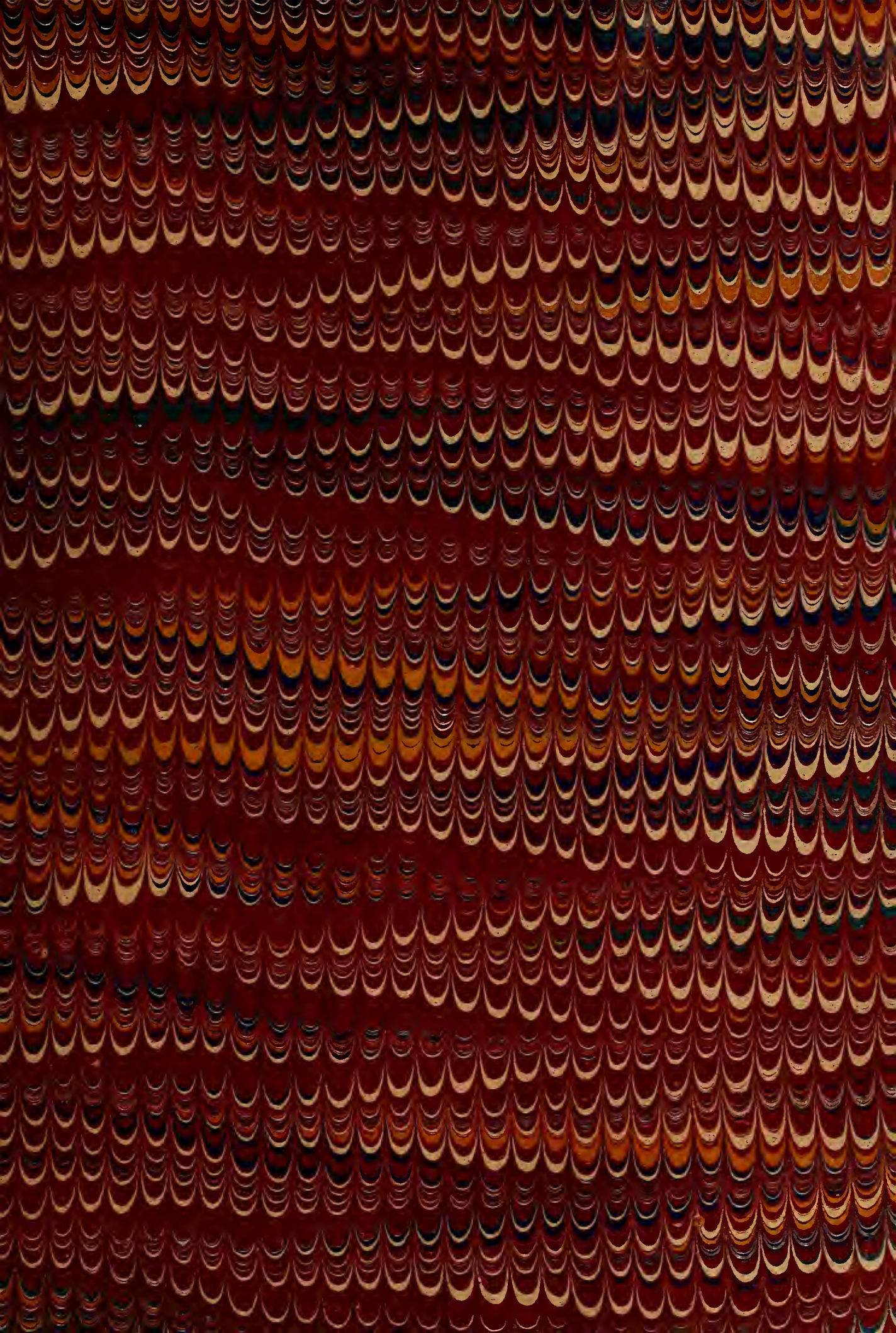
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UNITED STATES OF AMERICA.



OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

S U P P L E M E N T

CONTAINING THE

REVISED CLASSIFICATION OF SUBJECTS OF INVENTION,

ALPHABETICALLY ARRANGED.

JANUARY 6, 1885.



WASHINGTON:

GOVERNMENT PRINTING OFFICE.

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CLASSIFICATION OF INVENTIONS.

REVISED AND APPROVED BY THE UNITED STATES PATENT OFFICE, JANUARY 6, 1885.

All inventions are classified in the United States Patent Office.

The present classification, revised January 6, 1885, contains one hundred and seventy classes, subdivided into over three thousand sub-classes.

Persons desiring to inform themselves in regard to the state of the art in any line of invention can best do so by purchasing printed copies of the specifications and drawings of patents in the sub-class containing the invention, the number and cost of which will be given upon application.

Those wishing to subscribe for the printed copies of specifications and drawings of future patents in any sub-class may do so by depositing any amount from three to ten dollars, the sum depending upon the size of the sub-class. The copies will then be mailed to them weekly, at the rate of ten cents each, until the deposit shall have become exhausted when notice will be duly sent for renewal of deposit, if desired.

Orders for specifications and drawings by classes should give the numbers as well as the titles of the class and sub-class.

Orders for single patents should give the number and date of the patent and the name of the inventor.

SPECIFICATIONS of patents issued since May 30, 1865, commencing with No. 47,911, have been printed up to this date; also, all patents

previously issued for processes, and in the classes of Arms and Projectiles, Brakes and Gins, Distillation, Electricity, Fire-Arms, Fishing and Trapping, Harrows and Diggers, Harvesters, Injectors and Ejectors, Marine Propulsion, Metal Founding, Ordnance, Packing and Storing Vessels, Plows, Projectiles, Seeders and Planters, Sewing-Machines, Sheet-Metal Wire Making, Steam and Vacuum Pumps, Steam Water-Elevators, Sugar and Salt, Tobacco, Trees, Plants, and Flowers, and Wire Working, and the sub-classes of Bale-Band Tighteners, Bale-Ties, Cane-Mills, Cane-Strippers, Car-Seats, Cotton and Hay Presses, Tobacco-Driers, Tobacco-Elevators, and Time-Locks.

DRAWINGS of all patents, from earliest to present date, have been photolithographed, with a few exceptions.

The cost of copies of drawings with the specifications, if printed, when ordered in quantities of twenty or more, is ten cents per copy. If the specification has not been printed, an additional cost of ten cents per hundred words for a manuscript copy of it will be charged.

For the convenience of those who do not desire to order as many as twenty copies at one time, coupon orders, good for one drawing and printed specification, are sold in quantities of twenty or more, at ten cents each. These may be used singly and are good till used.

CLASSES NUMERICALLY ARRANGED.

Number.	Class.	Division.	Number.	Class.	Division.
1	Aeration and bottling	9	86	Arms and projectiles. Making	13
2	Apparel	24	87	Oils, fats, and glue	15
3	Artificial limbs	20	88	Optics	23
4	Baths and closets	9	89	Ordnance	22
5	Beds	8	91	Painting	6
6	Bee-culture	2	92	Paper-making	15
7	Brewing and fermenting	3	93	Paper-manufactures	17
8	Bleaching and dyeing	6	94	Paving	15
9	Boats	22	95	Photography	5
10	Metal bolts, nuts, rivets, and screws	13	96	Coating with metal	3
11	Book-binding	17	97	Plows	1
12	Boots and shoes	11	98	Pneumatics	28
13	Brakes and gins	25	99	Preserving	6
14	Bridges	4	100	Presses	12
15	Brushing and scrubbing	27	101	Printing	17
16	Builders' hardware	20	102	Projectiles	22
17	Butchering	2	103	Pumps	9
18	Caoutchouc and minor plastics	15	104	Railways	4
19	Carding	21	105	Railway-cars	10
20	Carpentry	4	106	Artificial stone, lime, and cement	15
21	Carriages and wagons	10	107	Bread, cracker, and lezenge making	8
22	Metal-founding	14	108	Roofing	4
23	Chemicals	6	109	Safes	20
24	Clasps and buckles	11	110	Steam-boiler furnaces	18
25	Clay and pottery	15	111	Seeders and planters	1
26	Cloth finishing	21	112	Sewing-machines	24
27	Coffins	20	113	Sheet-metal ware. Making	14
28	Cordage	21	114	Ships	22
29	Crinoline and corsets	5	115	Marine propulsion	22
30	Cutlery	20	116	Signals	5
31	Dairy	2	117	Silk	21
32	Dentistry	20	118	Spinning	21
33	Drafting	23	119	Care of live stock	2
34	Driers	28	120	Stationery	23
35	Educational appliances	23	121	Steam-engines	18
36	Electricity	16	122	Steam-boilers	18
37	Excavating	4	123	Air and gas engines	18
38	Felting and hats	15	124	Distillation	3
39	Fences	2	125	Stone-working	22
40	Advertising	5	126	Stoves and furnaces	19
41	Fine arts	5	127	Sugar and salt	15
42	Fire-arms	22	128	Surgery	20
43	Fishing and trapping	27	129	Tanning	11
44	Fuel	15	130	Thrashing	25
45	Furniture	8	131	Tobacco	2
46	Games and toys	27	132	Toilet	5
47	Trees, plants, and flowers	2	133	Trunks	11
48	Gas	3	134	Metal tubing and wire	13
49	Glass	15	135	Umbrellas and canes	5
50	Fluid-pressure regulators	18	136	Steam-engine valves	18
51	Grinding and polishing	27	137	Water-distribution	9
52	Explosives	6	138	Hydraulic motors	9
53	Hardware-making	13	139	Weaving	21
54	Harness	11	140	Wire-working	14
55	Harrows and diggers	1	141	Washing apparatus	27
56	Harvesters	7	142	Wood-turning	22
57	Hoisting	12	143	Wood-sawing	22
58	Horology	23	144	Wood-working machines	22
59	Chains, staples, and horseshoes	13	145	Wood-working tools	22
60	Hose and belting	11	146	Vegetable cutters and crushers	2
61	Hydraulic engineering	4	147	Coopering	22
62	Refrigeration	15	148	Metal tempering, annealing, and cementation	3
63	Jewelry	5	149	Hides, skins, and leather. Chemical treatment of	6
64	Journals and bearings	12	150	Packing and storing vessels	14
65	Kitchen and table articles	8	151	Nut and bolt locks	28
66	Knitting and netting	21	152	Wagon, car, and track irons	13
67	Lamps and gas-fittings	19	153	Metal bending and straightening	13
68	Laundry	27	154	Composite roofing	15
69	Leather	11	155	Chairs	8
70	Locks and latches	20	156	Curtains, shades, and screens	8
71	Fertilizers	6	157	Wheelwright-machines	22
72	Masonry	4	158	Metal ornamentation*	5
73	Measuring-instruments	23	159	Fire-escapes and ladders	12
74	Mechanical powers	12	160	Steam and vacuum pumps	18
75	Metallurgy	3	161	Steam water-elevators	18
76	Metal tools and implements. Making	13	162	Injectors and ejectors	18
77	Metal boring and drilling	13	163	Needles and pins	13
78	Metal forging	13	164	Punching and shearing	13
79	Metal personal wear. Making	13	165	DESIGNS	24
80	Metal-rolling	13	166	Artesian and oil wells	15
81	Metal-working tools	28	167	Medicines	6
82	Metal turning, planing, and milling	13	168	Farriery	28
83	Mills	25	169	Fire-engines	9
84	Music	5	170	Wind-wheels	28
85	Nails and spikes	13			

*Abolished. Now a sub-class in Class 63, Jewelry.

CLASSES ALPHABETICALLY ARRANGED.

Number.	Class.	Division.	Number.	Class.	Division.
40	Advertising	5	70	Locks and latches	20
1	Aeration and bottling	9	115	Marine propulsion	22
123	Air and gas engines	18	72	Masonry	4
2	Apparel	24	73	Measuring-instruments	23
86	Arms and projectiles. Making	13	74	Mechanical powers	12
166	Artesian and oil wells	15	167	Medicines	6
3	Artificial limbs	20	153	Metal bending and straightening	13
106	Artificial stone, lime, and cement	15	10	Metal bolts, nuts, rivets, and screws	13
4	Baths and closets	9	77	Metal boring and drilling	13
5	Beds	8	78	Metal forging	13
6	Bee-culture	2	22	Metal-founding	14
8	Bleaching and dyeing	6	75	Metallurgy	3
9	Boats	22	158	Metal ornamentation*	5
11	Book-binding	17	79	Metal personal wear. Making	13
12	Boots and shoes	11	80	Metal-rolling	13
13	Brakes and gins	25	148	Metal tempering, annealing, and cementation	3
107	Bread, cracker, and lozenge making	8	76	Metal tools and implements. Making	13
7	Brewing and fermenting	3	134	Metal tubing and wire	13
14	Bridges	4	82	Metal turning, planing, and milling	13
15	Brushing and scrubbing	27	81	Metal-working tools	28
16	Buildings' hardware	20	83	Mills	25
17	Butchering	2	84	Music	5
18	Caoutchouc and minor plastics	15	85	Nails and spikes	13
19	Carding	21	163	Needles and pins	13
119	Care of live stock	2	151	Nut and bolt locks	28
20	Carpentry	4	87	Oils, fats, and glue	15
21	Carriages and wagons	10	88	Optics	23
59	Chains, staples, and horseshoes	13	89	Ordnance	22
155	Chairs	8	150	Packing and storing vessels	14
23	Chemicals	6	91	Painting	6
24	Clasps and buckles	11	92	Paper-making	15
25	Clay and pottery	15	93	Paper-manufactures	17
26	Cloth	21	94	Paving	15
96	Coating with metal	3	95	Photography	5
27	Coffins	20	97	Plows	1
154	Composite roofing	15	98	Pneumatics	28
147	Coopering	22	99	Preserving	6
28	Cordage	21	100	Presses	12
29	Crimoline and corsets	24	101	Printing	17
156	Curtains, shades, and screens	8	102	Projectiles	22
30	Cutlery	20	103	Pumps	9
31	Dairy	2	164	Punching and shearing	13
32	Dentistry	20	105	Railway-cars	10
165	Designs	24	104	Railways	4
124	Distillation	3	62	Refrigeration	15
33	Drafting	23	108	Roofing	4
34	Driers	23	109	Safes	20
35	Educational appliances	23	111	Seeders and planters	1
36	Electricity	16	112	Sewing-machines	24
37	Excavating	4	113	Sheet-metal ware. Making	14
52	Explosives	6	114	Ships	22
168	Farriery	28	116	Signals	5
38	Felting and hats	15	117	Silk	21
39	Fences	2	118	Spinning	21
71	Fertilizers	6	120	Stationery	28
41	Fine arts	5	160	Steam and vacuum pumps	18
42	Fire-arms	22	122	Steam-boilers	18
169	Fire-engines	9	110	Steam-boiler furnaces	18
159	Fire escapes and ladders	12	121	Steam-engines	18
43	Fishing and trapping	27	136	Steam-engine valves	18
50	Fluid-pressure regulators	18	161	Steam water-elevators	18
44	Fuel	15	125	Stone-working	22
45	Furniture	8	126	Stoves and furnaces	19
46	Games and toys	27	127	Sugar and salt	15
48	Gas	3	128	Surgery	20
49	Glass	15	129	Tanning	11
51	Grinding and polishing	27	130	Thrashing	25
53	Hardware-making	13	131	Tobacco	2
54	Harness	11	132	Toilet	5
55	Harrows and diggers	1	47	Trees, plants, and flowers	2
56	Harvesters	7	133	Trunks	11
149	Hides, skins, and leather. Chemical treatment of	6	135	Umbrellas and canes	5
57	Hoisting	12	146	Vegetable cutters and crushers	2
58	Horology	23	152	Wagon, car, and track irons	13
60	Hose and belting	11	141	Washing apparatus	27
61	Hydraulic engineering	4	137	Water-distribution	9
138	Hydraulic motors	9	139	Weaving	21
162	Injectors and ejectors	18	157	Wheelwright-machines	22
63	Jewelry	5	170	Wind-wheels	28
64	Journals and bearings	12	140	Wire-working	14
65	Kitchen and table articles	8	143	Wood-sawing	22
66	Knitting and netting	21	142	Wood-turning	22
67	Lamps and gas-fittings	19	144	Wood-working machines	22
68	Laundry	27	145	Wood-working tools	22
69	Leather	11			

* Abolished. Now a sub-class in Class 63, Jewelry.

SUB-CLASSES.

CLASS 10.—ADVERTISING. (V.)

Sub-classes.

- | | |
|----------------------------|----------------------------|
| 1. Articles. | 9. Labels. |
| 2. Automatic devices. | 10. Label-holders. |
| 3. Card-racks. | 17. Map-holders. |
| 19. Counters and shelves. | 11. Picture-exhibitors. |
| 4. Desks and frames. | 12. Show boxes and cards. |
| 5. Door and drawer plates. | 13. Show-cases. |
| 6. Dummies and hangers. | 16. Show stands and racks. |
| 8. Indicators— | 14. Signs. |
| 18. Time. | |

CLASS 1.—AERATION AND BOTTLING. (IX.)

Sub-classes.

- | | |
|---------------------------|---------------------------|
| 1. Aeration. | 7. Gas-generators. |
| 12. Beer apparatus. | 11. Sirup-fountains. |
| 3. Capping-machines. | 9. Soda-fountains. |
| 5. Corking and filling. | 10. Soda-water apparatus. |
| 14. Dispensing-fountains. | |

Sub-Classes in Aeration and Bottling, with Explanatory Notes.

1. AERATION. Apparatus for aerating liquids.
12. BEER APPARATUS. Apparatus for dispensing beer, and accessories—as agitating and aerating faucets, compressed air and gas apparatus for raising beer and forcing it out of barrels, draft-condensers, and beer-pumps—but does not include anything relating to the manufacture of beer. (Class 7, Division III.)
3. CAPPING-MACHINES. Machinery for applying sheet-metal capsules and wire caps to corked bottles.
5. CORKING AND FILLING. Apparatus for filling and stopping bottles, but not the stopper itself. (Class 150, Division XIV.) apparatus for filling barrels, siphon-bottles, medicinal capsules, paint-cans, oil-casks, and inkstands; apparatus for collecting natural mineral water and bottling it, and accessories for corking-machines—as sirup-agitators; and devices for holding cans or bottles while being filled.
14. DISPENSING-FOUNTAINS. Beverage-dispensing fountains not solely beer, together with their fittings.
7. GAS-GENERATORS. Only apparatus for generating gas for beverages.
11. SIRUP-FOUNTAINS. Sirup tanks, cans, and holders, with their fittings, organized to be used in connection with dispensing-fountains.
9. SODA-FOUNTAINS. Stationary and transporting fountains, together with their discharge-nozzles and fittings.
10. SODA-WATER APPARATUS. Soda-water appliances not otherwise classified—such as methods of charging fountains, carbonic-acid-gas washers, and frames for supporting carbonating apparatus.

CLASS 123.—AIR AND GAS ENGINES. (XVIII.)

Sub-classes.

- | | |
|-----------------|---------------|
| 1. Air. | 3. Explosive. |
| 5. Attachments. | 4. Gas. |
| 2. Caloric. | |

CLASS 2.—APPAREL. (XXIV.)

Sub-classes.

- | | |
|-------------------------|-----------------------------|
| 30. Bonnets. | 12. Pants and drawers. |
| 1. Capes and shawls. | 13. Pin and needle cases. |
| 2. Coats and vests. | 14. Pinking. |
| 3. Collars and cuffs. | 16. Plaiting. |
| 4. Cutting. | 15. Pockets. |
| 5. Diapers. | 18. Sewing. |
| 6. Embroidery-patterns. | 19. Shirts and bosoms. |
| 7. Fur goods. | 20. Skirt-elevators. |
| 8. Garters and belts. | 21. Skirts and protectors. |
| 9. Gloves. | 23. Stockings. |
| 10. Handkerchiefs. | 22. Stretchers and formers. |
| 11. Hats and caps. | 25. Tailoring. |
| 32. Hat-sweats. | 29. Thimbles. |
| 33. Hat-ventilators. | 26. Trimmings. |
| 11. Neckties. | 27. Work-boxes. |
| 28. Needles. | |

CLASS 56.—ARMS AND PROJECTILES. MAKING (XIII.)

Sub-classes.

- | | |
|-------------------------|-----------------|
| 1. Arms. | 5. Gun-barrels. |
| 2. Bullets and shot. | 6. Ordnance. |
| 3. Cannon and ball. | 7. Rifling. |
| 4. Cartridges and caps. | |

CLASS 166.—ARTESIAN AND OIL WELLS. (XV.)

Sub-classes.

- | | |
|-------------------------|------------------------|
| 1. Casing-heads. | 6. Reamers. |
| 2. Cleaning. | 7. Tube-clamps. |
| 3. Drilling and boring. | 8. Tubing and packing. |
| 4. Drill-jars. | 9. Walking-beams. |
| 5. Drill-rod grabs. | |

CLASS 3.—ARTIFICIAL LIMBS. (XX.)

Sub-classes.

- | | |
|--------------------|------------------------|
| 1. Arms and hands. | 2. Fracture apparatus. |
| 4. Crutches. | 3. Legs. |

CLASS 106.—ARTIFICIAL STONE, LIME, AND CEMENT. (XV.)

Sub-classes.

- | | |
|-----------------|----------------|
| 1. Composition. | 4. Molds. |
| 2. Fire-brick. | 5. Plastering. |
| 3. Limekilns. | 6. Processes. |

CLASS 4.—BATHS AND CLOSETS. (IX.)

Sub-classes.

- | | |
|-----------------------|---|
| 1. Basins and stands. | Water-closets— |
| 2. Bathing apparatus. | 16. Plunger. |
| 19. Bed-pans. | 17. Valved. |
| 5. Closet-cisterns. | 18. Water-closet attachments. |
| 20. Dry closets. | 15. Water-closet valves. |
| 11. Sinks and traps. | 21. Water-closet and sewer ventilation. |
| 12. Urinals. | |
| 13. Vapor-baths. | |

Sub-Classes in Baths and Closets, with Explanatory Notes.

1. BASINS AND STANDS. Stationary wash-stands and fittings, the water tanks and supply connections of portable wash-stands, and wash-basins provided with toilet appliances, but not furniture. (Class 45, Division VIII.) or leveling wash-stands, (Class 114, Division XXII.)
2. BATHING APPARATUS. Stationary and portable bath-tubs and their fittings, shower-baths, swimming-baths, sea-baths, and surf-baths, but not electrical baths. (Class 128, Division XX.) vapor-baths, (Class 4, Division IX.) or toilet appliances, (Class 132, Division V.)
10. BED-PANS. Includes, besides bed-pans proper, those devices having reservoirs on the floor and tubes connecting with the bed.
5. CLOSET-CISTERNS. Flushing-tanks independent of the closet-casing, together with their discharge-fittings, overflow valves and preventors, and reservoir-boxes.
20. DRY CLOSETS. Earth-closets, privies, and chair, chamber, and portable commodes, but not slop-buckets which have no seat. (Class 150, Division XIV.) or apparatus for the removal and treatment of night-soil, (Class 71, Division VI.)
11. SINKS AND TRAPS. Sink-strainers, outlet-covers, and grease-traps, ball-traps, mercury traps, seal-traps, and underground catch-basins located in the pipes leading to the sewer; but does not include traps and catch-basins in masonry sewers. (See Class 72, Division IV.)
12. URINALS. Stationary urinals having water-flushing fittings.
13. VAPOR-BATHS. Chemical, hot-air, steam, compressed-air, medicated, and mud baths, but not electrical baths, (Class 128, Division XX.)
16. WATER-CLOSETS. PLUNGER. Closets located above ground which have their main discharge controlled by a plug or plunger which reciprocates on a vertical line only.
17. WATER-CLOSETS. VALVED. Closets and their fittings located above ground which do not have their main discharge controlled by a plug or plunger which reciprocates on a vertical line.
18. WATER-CLOSET ATTACHMENTS. An attachment is not a detail or modification but an addition to a complete closet or part thereof, and includes seat-protectors, and waste-paper boxes not storing vessels, (Class 150, Division XIV.)
15. WATER-CLOSET VALVES. Valves which are more than simple cut-offs, by reason of some construction that makes them peculiarly fitted for water-closets.
21. WATER-CLOSET AND SEWER VENTILATION. Schemes for introducing fresh air into or drawing foul air out of sewers, drainage systems, privies, railway-closets, urinals, and water closets.

CLASS 5.—BEDS. (VIII.)

Sub-classes.

- | | |
|--------------------------------|---------------------------------|
| Beds— | Bedsteads— |
| 1. Air. | 16. Sofa. |
| 5. Camp. | 17. Table. |
| Bed-bottoms— | 18. Wardrobe. |
| 23. Folding. | 22. Clothes-clamps. |
| 24. of cords, | 6. Cording and fastenings. |
| 25. of slats, | 7. Crib attachments. |
| 26. of slats and springs, | 20. Cribs and cradles. |
| 29. of springs, | 10. Hammocks. |
| 19. of wire and other fabrics. | 11. Head-sections. |
| 3. Bed-clothing. | 13. Mattresses— |
| 4. Bedsteads— | 14. Mosquito-nets and canopies. |
| 8. Extension, | 15. Pillows. |
| 9. Folding, | 21. Springs. |
| 12. Invalid, | |

CLASS 6.—BEE-CULTURE. (II.)

Sub-classes.

- | | |
|---------------|---------------------|
| 1. Bee-hives. | 2. Hive appliances. |
|---------------|---------------------|

CLASS 8.—BLEACHING AND DYEING. (VI.)

Sub-classes.

- | | |
|-------------------------|----------------------|
| 2. Bleaching. | 13. Mordants. |
| 1. Carbon dyes.* | 7. Press-dyeing. |
| 4. Dye and bleach vats. | 8. Renovating dress. |
| 5. Dyeing processes. | 14. Sizing fabrics. |
| 6. Dyes. | 12. Wool-cleaning. |

* Title changed from aniline and homologues.

CLASS 9.—BOATS. (XXII.)

Sub-classes.

- | | |
|---------------------------------------|---------------------------|
| 1. Boat hooks and fenders. | 6. Life-preservers. |
| 2. Building. | 7. Oars and oar-locks. |
| 3. Buys and safes. | 8. Rafting and booming. |
| 4. Detaching, hoisting, and lowering. | 9. Sectional and folding. |
| 5. Life boats and rafts. | 10. Swimming apparatus. |

CLASS 11.—BOOK-BINDING. (XVII.)

Sub-classes.

- | | |
|---------------------------|------------------------|
| 1. Albums. | 7. Indexing. |
| 2. Binding-machines. | 9. Newspaper-files. |
| 3. Books and covers. | 8. Ruling-machines. |
| 4. Book-cover protectors. | 10. Temporary binders. |
| 5. Book-cutting. | 11. Writing-tablets. |
| 6. Book-sewing. | |

CLASS 12.—BOOTS AND SHOES. (XI.)

Sub-classes.

- | | |
|----------------------------------|--------------------------------------|
| 2. Boot-jacks. | 31. Peg-floats. |
| 30. Boot-treering machines. | 11. Pegs. |
| 3. Boot-trees. | 12. Pegging-jacks. |
| 27. Box-nailing machines. | 13. Pegging-machines. |
| 4. Burnishing. | 14. Rubber. |
| 24. Channeling-machines. | 15. Shanks and machines. |
| 5. Crimping. | 16. Shoe-fastenings. |
| 6. Edge-planes and shaves. | 17. Soles. |
| 28. Glove and corset fastenings. | 18. Sole and heel trimming machines. |
| 32. Hand nailing implements. | 19. Sole and heel machines. |
| 29. Heel-stiffener machines. | 26. Sole and heel plates. |
| 7. Heels. | 20. Tips and stiffeners. |
| 8. Ice-creeper. | 21. Tools. |
| 9. Lasts. | 22. Uppers. |
| 10. Lasting-machines. | 23. Upper-machines. |
| 25. Lasting and lasting tools. | |

CLASS 13.—BRAKES AND GINS. (XXV.)

Sub-classes.

- | | |
|-----------------------|--------------------------|
| 1. Gin attachments. | 6. Reciprocating brakes. |
| 2. Hackling-machines. | 7. Roller-gins. |
| 3. Hair-pickers. | 8. Rotary brakes. |
| 4. Oakum-machines. | 9. Saw-gins. |
| 5. Processes. | |

CLASS 107.—BREAD, CRACKER, AND LOZENGE MAKING.

(VIII.)

Sub-classes.

- | | |
|--------------------------------|-------------------------------|
| 1. Bread and cracker machines. | 6. Lozenge-machines. |
| 9. Stampers. | 4. Mixers and kneaders. |
| 10. Strippers. | 2. Pastry-boards. |
| 3. Cake-cutters. | 7. Pie crimpers and trimmers. |
| 5. Dough-raisers. | 8. Rolling-pins. |

CLASS 7.—BREWING AND FERMENTING. (III.)

Sub-classes.

- | | |
|-------------------------|------------------------------|
| 9. Fermented beverages. | 6. Preserving beer and wine. |
| 1. Fermenting-vats. | 7. Purifying beer and wine. |
| 3. Malting. | 8. Hop-backs. |
| 4. Mashing. | 10. Wine. |
| 5. Mash-beaters. | |

CLASS 14.—BRIDGES. (IV.)

Sub-classes.

- | | |
|----------------|-------------------------|
| Bridges— | Bridges— |
| 7. Arch. | 6. Truss. |
| 1. Draw. | 2. Ferry-guards. |
| 9. Gates. | 3. Girders and columns. |
| 8. Floating. | 4. Piers. |
| 5. Suspension. | |

CLASS 15.—BRUSHING AND SCRUBBING. (XXVII.)

Sub-classes.

- | | |
|----------------------------------|------------------------------|
| 1. Blacking box and brush cases. | Brush and broom bridles— |
| 18. Blacking-box holders. | 6. Supports. |
| 61. Boot-blackening machines. | 25. Brush-cleaners. |
| 2. Boot-cleaners. | Brush heads and faces— |
| 4. Broom-machines. | 26. Bath and flesh brushes, |
| Brooms— | 27. Brush and broom fiber, |
| 19. Broom-heads, | 28. Dusting-brushes, |
| 20. Household, | 29. Hair-brushes, |
| 21. Stable and yard, | 30. Hat and clothes brushes, |
| 22. Whisk. | 31. Horse-brushes, |
| 23. Brush and broom bridles— | 32. Metal-cleaning brushes, |
| 24. Handles, | |

CLASS 15.—Continued.

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|--------------------------------------|--------------------------------|
| Brush heads and faces— | Fountain-brushes— |
| 33. Metallic tuft-fasteners, | 46. Blacking, |
| 34. Molds and molded backs, | 47. Broom, |
| 35. Nail-brushes, | 48. Hair, |
| 36. Paint and whitewash brushes, | 49. Paint. |
| 37. Rotary brushes, | 51. Scrubbers, |
| 13. Scrubbers, | 50. Shaving, |
| 38. Shaving-brushes, | 52. Tooth, |
| 39. Tooth-brushes. | 53. Window-cleaners. |
| 7. Brush-machines. | Holder— |
| 40. Brush-trimming machines. | 54. Brush-head. |
| 8. Carpet-cleaners. | 55. Convertible mop and brush. |
| 60. Carpet-sweepers. | 56. Mop-heads. |
| Chimney-cleaners— | 10. Mats. |
| 41. Flue and stove-pipe, | 57. Mops. |
| 42. Lamp. | 12. Mop-wringers. |
| 43. Combined mop heads and wringers. | 14. Scrubbing-machines. |
| 44. Combined scrubbers and mops. | 15. Pails. |
| 45. Dressing and assorting machines. | 58. Shoe-blackening stands. |
| | 16. Shoe-brushes. |
| | 17. Street-sweepers. |
| | 59. Window-cleaners. |

CLASS 16.—BUILDERS' HARDWARE. (XX.)

Sub-classes.

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|--------------------------------|------------------------------|
| 33. Bells— | 10. Handies. |
| 31. Call, | 11. Hinges— |
| 32. Door, | 48. Awning-blind, |
| 39. Letter-box, | 5. Coach, |
| 44. Sleigh. | 49. Gate, |
| 40. Bell-hanging— | 12. Lock, |
| 41. Pulls, | 14. Safe, |
| 42. Ringing. | 25. Spring, |
| 1. Blind-stops. | 27. Table. |
| 2. Bolts. | 50. Nail-heads. Ornamental. |
| Burglar-alarms— | 15. Sash-balances— |
| 34. Combined, | 18. Fasteners, |
| 35. Detonating, | 19. Holders, |
| 43. Miscellaneous, | 20. Weights. |
| 36. Ringing. | 16. Sash-cord fasteners— |
| 3. Carpet-fasteners. | 17. Guides. |
| 4. Casters— | 22. Shutter-bowers— |
| 45. Ball, | 23. Fasteners, |
| 21. Sewing-machine. | 24. Workers. |
| 6. Door-checks— | 26. Stair-rods and securers. |
| 46. Door-checks and closers. | 27. Till-alarms. |
| Pneumatic, | 28. Transom-lifters. |
| 47. Door-closers. Gravitating, | 29. Window-head fasteners. |
| 7. Hangers, | 30. Window and door buttons. |
| 8. Securers, | |
| 9. Springs. | |

CLASS 17.—BUTCHERING. (II.)

Sub-classes.

- | | |
|-----------------------------|--|
| 8. Butchers' stalls. | Meat-cutters— |
| 9. Chopping-blocks. | 21. Double-cylinder, |
| Dressing— | 22. Hand, |
| 10. Fish-dressing machines, | 23. Rocking-knife, |
| 11. Hog-scraping machines, | 24. Slicers, |
| 12. Intestine-cleaners, | 25. Trip mechanism. |
| 13. Skinning. | 26. Meat-mixers. |
| 14. Meat-clamps. | Meat-tenderers— |
| 15. Hooks. | 27. Hand, |
| Meat-cutters— | 28. Pivoted-head, |
| 16. Cracklings, | 29. Rotary. |
| 17. Crank mechanism, | 6. Sausage-machines. |
| 18. Cube, | 7. Scalding and singeing. |
| 19. Cylinder and block, | 30. Slaughtering, elevating, and suspending. |
| 20. Cylinder and concave, | |

CLASS 18.—CAOUTCHOUC AND MINOR PLASTICS. (XV.)

Sub-classes.

- | | |
|---------------------------|--------------------------------|
| 2. Articles. | 6. Machines for coating. |
| 1. Artificial ivory. | 7. Miscellaneous compositions. |
| 3. Celluloid. | 8. Soft rubber. |
| 4. Fabrics. | 9. Vulcanizing apparatus. |
| 5. Hard rubber. | 10. Vulcanized fiber. |
| 11. Insulating materials. | |

CLASS 19.—CARDING. (XXI.)

Sub-classes.

- | | |
|-------------------|--------------------|
| 1. Burring. | 12. Covering yarn. |
| 2. Card-clothing. | 7. Feeding-cards. |
| 3. Carding. | 8. Lapping. |
| 4. Cleaning. | 9. Pickers. |
| 5. Coilers. | 10. Wadding. |
| 6. Combing. | 11. Wool oiling. |

CLASS 119. CARE OF LIVE STOCK. (II.)

Sub-classes.

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|---------------------------------|------------------------------|
| Animal-stocks— | 48. Curry-combs. |
| 14. Hog traps, | 47. Gags and muzzles. |
| 15. Horse and cattle, | 18. Gangways. |
| 16. Sheep. | 3. Grooming. |
| 46. Bird cages and houses. | 49. Hitching-pests and ties. |
| 17. Catching and holding tools. | 51. Hopples. |

CLASS 119.—Continued.

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|------------------------------|---------------------------|
| 4. Incubators. | Straw-cutters— |
| 13. Nose-rings and ringing- | 30. Cylinder and concave. |
| tools. | 31. Double-cylinder. |
| 12. Pokes. | Pivoted-knife— |
| 5. Poultry-culture. | 32. Rake-feed. |
| 19. Sheep-protectors. | 33. Roller-feed. |
| 9. Stanchions. | 34. Without feed. |
| Steading and feeding— | Rotary wheel— |
| 20. Calf-feeders. | 35. Follower-feed. |
| 21. Combined troughs and | 36. Rake-feed. |
| racks. | 37. Roller-feed. |
| 22. Feed-racks. | 38. Without feed. |
| 23. Feed-troughs. | Single-cylinder— |
| 52. Nose-bags. | 39. Rake-feed. |
| 24. Releasing devices. | 40. Roller-feed. |
| 25. Stall-floors. | 41. Without feed. |
| 26. Stalls, sheds, and pens. | Sliding-knife— |
| 27. Stock-sorters. | 42. Rake-feed. |
| Straw-cutters— | 43. Roller-feed. |
| Cutter and bed— | 44. Without feed. |
| 28. Reciprocating-knife. | 50. Tethers. |
| 29. Rotary-cylinder. | |

CLASS 20.—CARPENTRY. (IV.)

Sub-classes.

- | | |
|----------------------|------------------------------|
| 2. Doors— | 13. Shingling-brackets. |
| 23. Car. | 14. Shutters— |
| 24. Sliding. | 29. Flexible. |
| 3. Door-operators. | 30. Fire-proof. |
| 4. Floors. | 15. Skylights. |
| 5. Frame houses. | 16. Slatted floor-coverings. |
| 7. Interiors. | 17. Stairs. |
| 9. Lathing. | 18. Stair-covers. |
| 10. Marquetry. | 19. Weather-strips. |
| 26. Moldings. | 20. Windows. |
| 11. Portable houses. | |
| 12. Scaffolds— | |
| 28. Bracket. | |

CLASS 21.—CARRIAGES AND WAGONS. (X.)

Sub-classes.

- | | |
|----------------------------|------------------------|
| 1. Ambulances. | 38. Road-engines. |
| 2. Axle-boxes. | 39. Running-gear. |
| 3. Axle-lubricators. | 40. Sand-bands. |
| 4. Axle-skins. | 41. Seat-locks. |
| 5. Axles. | 42. Seats— |
| 6. Biers. | 43. Shifting. |
| 7. Bodies. | 44. Spring. |
| 8. Brakes. | 45. Shifting-ralls. |
| 9. Brakes. Automatic | 46. Sled-brakes. |
| 10. Brake-levers. | 47. Sled-propellers. |
| 11. Carriage-irons. | 48. Sleds. |
| 12. Children's carriages. | 49. Spoke-sockets. |
| 13. Clips. | 50. Springs— |
| 14. Close carriages. | 51. Platform. |
| 15. Dash-boards. | 52. Side. |
| 16. Detaching horses. | 53. Torsion. |
| 17. Doors. | 54. Standards. |
| 18. Draft-equalizers. | 55. Steps. |
| 19. Drays. | 56. Sulkies. |
| 20. Dumping-wagons. | 57. Thill-couplings. |
| 21. End-gates. | 58. Tires. |
| 22. Fellies. | 59. Tire-tighteners. |
| 23. Fenders. | 60. Top-joints. |
| 24. Fifth-wheels. | 61. Top-props. |
| 25. Hay-racks. | 62. Tops. |
| 26. Hearses. | 63. Tongue-supports. |
| 27. Holdbacks. | 64. Traction-wheels. |
| 28. Horse-carriages. | 65. Trucks. |
| 29. Hounds. | 66. Umbrella-supports. |
| 30. Hub-attaching devices. | 67. Velocipedes. |
| 31. Hubs. | 68. Wheelbarrows. |
| 32. King-bolts. | 69. Wheels. |
| 33. Lumber-wagons. | 70. Whiffletree-hooks. |
| 34. Neck-yokes. | 71. Whiffletrees. |
| 35. Ox-yokes. | 72. Whip-sockets. |
| 36. Poles and shafts. | 73. Windows. |
| 37. Rein-holders. | |

CLASS 59.—CHAINS, STAPLES, AND HORSESHOES. (XIII.)

Sub-classes.

- | | |
|----------------------------|------------------------|
| 1. Chains. | 6. Horseshoe-machines. |
| 2. Chain and link making. | 7. Staples. |
| 4. Horseshoe-bars. Making | 8. Staples. Making |
| 5. Horseshoe-culks. Making | |

CLASS 155.—CHAIRS. (VIII.)

Sub-classes.

- | | |
|-----------------|------------------|
| 3. Chairs— | Chairs— |
| 1. Barbers'. | 14. Oscillating. |
| 6. Convertible. | 16. Reclining. |
| 7. Dentists'. | 17. Revolving. |
| 8. Folding. | 18. Rocking. |
| 11. Invalid. | 21. Step-ladder. |
| 12. Nursery. | 23. Surgical. |
| 13. Opera. | 24. Tilting. |

CLASS 155.—Continued.

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|-------------------|-----------------------|
| 4. Chair-bottoms. | Seats— |
| 15. Piano-stools. | 5. Cirens. |
| Rests— | 25. Spring. |
| 9. Foot. | 19. Settees. |
| 10. Head. | 20. Sofas. |
| Seats— | 22. Stools and seats. |
| 2. Car. | |

CLASS 23.—CHEMICALS. (VI.)

Sub-classes.

- | | |
|----------------------------|------------------------|
| 1. Acids. Mineral | 25. Incandescents. |
| 21. Ammonia. | 10. Metalloids. |
| 3. Apparatus. | 11. Packing chemicals. |
| 24. Carbon compounds, (not | 26. Purifying water. |
| dyes.) | 13. Salines. |
| 23. Distilling wood. | 22. Soda and potash. |
| 5. Fire-extinguishing com- | |
| pounds. | |

CLASS 24.—CLASPS AND BUCKLES. (XI.)

Sub-classes.

- | | |
|-------------------------|-----------------------------|
| 26. Baggage-checks. | 25. Garment-supporters. |
| 1. Buckles. | 9. Hooks. |
| 2. Buttons— | 10. Hooks and eyes. |
| 23. Hinged shoe. | 11. Necktie-fasteners. |
| 21. Separable. | 13. Paper-fasteners. |
| 3. Buttoners. | 14. Punches. |
| 4. Button-fasteners. | 15. Rings. |
| 5. Button-machines. | 16. Safety attachments. |
| 6. Clasps. | 17. Snap-hooks. |
| 24. Cuff-holders. | 20. Suspenders. |
| 7. Eyelets. | 18. Tags and tag-fasteners. |
| 8. Eyeletting-machines. | 19. Ticket-clasps. |

CLASS 25.—CLAY AND POTTERY. (XV.)

Sub-classes.

- | | |
|-------------------|--------------------------------|
| 1. Bricks. | 10. Pottery articles. |
| 2. Brick-kilns. | 11. Pottery-kilns. |
| Brick-machines— | 12. Pottery-machines. |
| 4. Reciprocating. | 13. Pug-mills, clay-mills, and |
| 3. Rotary. | mortar-mixers. |
| 5. Screw. | 14. Pulverizers. |
| 6. Brick-molds. | 15. Roofing-tiles. |
| 7. Crucibles. | 16. Sarcophagi. |
| 8. Drain-tiles. | 17. Tile-machines. |
| 9. Paving-tiles. | |

CLASS 26.—CLOTH FINISHING. (XXI.)

Sub-classes.

- | | |
|---------------|----------------|
| 1. Drying. | 5. Pressing. |
| 2. Finishing. | 6. Shearing. |
| 3. Folding. | 7. Sponging. |
| 4. Napping. | 8. Stretching. |

CLASS 96.—COATING WITH METAL. (III.)

Sub-classes.

- | | |
|------------------------|-------------------|
| 1. Electro-deposition. | 8. Precipitating. |
| 2. Galvanizing. | 7. Tinning. |
| 5. Nickel-plating. | |

CLASS 27.—COFFINS. (XX.)

No sub-classes.

CLASS 154.—COMPOSITE ROOFING. (XV.)

Sub-classes.

- | | |
|---------------|---------------|
| 1. Apparatus. | 2. Composite. |
| | 3. Felt. |

CLASS 147.—COOPERING. (XXII.)

Sub-classes.

- | | |
|----------------------------|----------------------|
| 1. Barrel-head making. | 12. Crozing barrels. |
| 2. Barrel-hoop machines. | 6. Crozing staves. |
| 3. Barrel-making machines. | 13. Hoop-drivers. |
| 4. Basket-making machines. | 8. Joining staves. |
| 5. Box-machines. | 10. Wooden articles. |
| 11. Coiling. | |

Sub-classes in Coopering, with Explanatory Notes.

1. BARREL-HEAD MAKING. The wood is held in a clamp and cut to disk form, usually with beveled edges, by a saw or cutter. The clamp revolves or cutter moves around it.
2. BARREL-HOOP MACHINES. For dressing or cutting wooden hoops by saws, or by rotary or reciprocating cutters, and mechanism for forming the taper or bevel of hoops.
3. BARREL-MAKING MACHINES. For assembling the barrel.
4. BASKET-MAKING MACHINES. For building up splints about a former.
5. BOX-MACHINES. For making pill-boxes, &c., by forming the box upon the stock by means of cutters, and then severing the box from the block.
11. COILING. Coiling hoops or veneers, usually about a collapsible former.

12. CROZING BARRELS. Machines for cutting the croze after the barrel is set up.
6. CROZING STAVES. Cutting the croze in staves or blanks.
13. HOOP-DRIVERS. Machines for trussing and evening barrels.
8. JOINTING STAVES. Machines for producing the-bulge and side bevel.
10. WOODEN ARTICLES. Miscellaneous small articles of wood.

CLASS 28.—CORDAGE. (XXI.)

Sub-classes.

- | | |
|-------------------------------|-------------------------------|
| 1. Balling. | 12. Spools. |
| 2. Banding. | 13. Tassels. |
| 3. Bobbin-supporters. | 14. Warping. |
| 4. Braiding. | Winding bobbins— |
| 5. Cord and rope. | 15. Warp-wind. |
| 6. Covering cord. | 16. Weft-wind. |
| 7. Finishing yarn and thread. | 17. Sewing-machine shuttle. |
| 8. Fuse. | 18. Winding spools. |
| 9. Packaging braid and yarn. | 19. Winding tatting-shuttles. |
| 10. Reels. | 20. Yarn guides and clearers. |
| 11. Separating rope. | |

CLASS 29.—CRINOLINE AND CORSETS. (XXIV.)

Sub-classes.

- | | |
|----------------------|--------------------|
| 1. Bustles. | 6. Pads. |
| 3. Corsets. | 7. Skirt-machines. |
| 4. Hoops and clasps. | 9. Stays. |
| 5. Hoop-skirts. | 8. Underwaists. |

CLASS 156.—CURTAINS, SHADES, AND SCREENS. (VIII.)

Sub-classes.

- | | |
|----------------------------------|----------------------|
| 1. Carriage-curtain fastenings. | 6. Friction-rollers. |
| 2. Curtain-cord holders. | 7. Inside blinds. |
| 11. Curtain-cord tighteners. | 8. Ratchet and pawl. |
| 3. Curtain-fixtures. | 9. Spring-rollers. |
| 4. Curtain-rollers and brackets. | 13. Window-cornices. |
| 5. Curtain-tassels. | 14. Window-screens. |
| 12. Door-screens. | 10. Window-shades. |

CLASS 30.—CUTLERY. (XX.)

Sub-classes.

- | | |
|------------------------------|--------------------------|
| 1. Animal-shears. | Kuives— |
| 2. Button-hole cutters. | 10. Pocket. |
| 3. Can-openers. | 19. Knife-erasers. |
| 16. Envelope-openers. | 11. Pruning implements. |
| 21. Fork-guards. | 12. Razors. |
| 5. Forks. | 13. Scissors and shears. |
| 22. Forks and spoons. Solid. | 14. Twine-cutters. |
| 9. Knives— | 15. Wick-trimmers. |
| 20. Gage. | 17. Wire-shears. |
| 8. Hay. | |

CLASS 31.—DAIRY. (II.)

Sub-classes.

- | | |
|---------------------------------|-----------------------------|
| Butter and cheese— | Churns—Rotary— |
| 24. Cutters. | Horizontal double |
| 23. Manufacture of | dasher— |
| 25. Butter workers and molds. | 40. Concentric shafts, |
| 20. Centrifugal creamers. | 41. Parallel shafts. |
| 21. Cheese-hoops. | 42. Vertical single dasher. |
| 26. Cheese-turners. | Vertical double dasher— |
| 22. Cheese-vats and curd-break- | 43. Concentric shafts, |
| ers. | 44. Parallel shafts. |
| 7. Churns— | 45. Vibrating, |
| 9. Double-acting. | 18. Working body. |
| Reciprocating. | 8. Cow-milkers. |
| Crank mechanism— | 27. Cream-pumps. |
| 29. Multiple dasher. | Milk-coolers— |
| 30. Single dasher. | 45. Aerating. |
| 31. Combined lever and | 46. Creaming-cans— |
| crank mechanism, | 47. Agitators, |
| 32. Foot mechanism, | 48. Depending tube, |
| 33. Hand and foot mechan- | 49. Floats, |
| ism. | 50. Vacuum creamers, |
| Lever mechanism— | 51. Vertical tube. |
| 34. Multiple dasher. | 52. Milk-circulation. |
| 35. Single dasher. | 53. Vats— |
| 36. Rocking-seat mechan- | 54. Air-circulation. |
| ism, | 55. Horizontal tube. |
| 37. Without operating | 56. Removable pipe. |
| mechanism. | 13. Milk-stools. |
| Rotary— | 14. Pails and strainers. |
| 38. Diagonal dasher, | 28. Tables and racks. |
| 39. Horizontal single | |
| dasher. | |

CLASS 32.—DENTISTRY. (XX.)

Sub-classes.

- | | |
|---------------------|---------------|
| 1. Articulators. | 6. Molds. |
| 2. Drills. | 7. Operative. |
| 3. Foil-condensers. | 8. Pluggers. |
| 4. Mechanical. | 9. Teeth. |
| 5. Miscellaneous. | 10. Tools. |

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CLASS 165.—DESIGNS. (XXIV.)

The sub-classes conform as nearly as possible to those of the mechanical classes.

CLASS 124.—DISTILLATION. (III.)

Sub-classes.

- | | |
|-------------------|----------------------|
| 1. Aging liquors. | 8. Oil. |
| 2. Alcohol. | 9. Paraffine. |
| 3. Burning-fluid. | 10. Preparing grain. |
| 4. Condensers. | 11. Refining oils. |
| 6. Fire-tests. | 13. Revenue-guards. |
| 7. Fresh water. | 12. Turpentine. |

CLASS 33.—DRAFTING. (XXIII.)

Sub-classes.

- | | |
|---------------------------|--------------------|
| 1. Calipers and dividers. | 8. Plotters. |
| 2. Curve-scribers. | 12. Protractors— |
| 5. Ellipsographs. | 9. Scribes, |
| 6. Pantographs. | 10. Stair-curvers. |
| 7. Parallel-rulers. | 11. Rulers. |

CLASS 34.—DRIERS. (XXVIII.)

Sub-classes.

- | | |
|------------------------|---------------------|
| 13. Coffee-roasters. | Driers— |
| 1. Driers— | 7. Meal, |
| 2. Feather-renovators, | 8. Paper, |
| 3. Fruit, | 10. Tobacco, |
| 12. Glue, | 11. Wool. |
| 4. Grain, | 14. Gravel-heaters. |
| 5. Lumber, | 9. Smoke-houses. |
| 6. Malt, | |

CLASS 35.—EDUCATIONAL APPLIANCES. (XXIII.)

Sub-classes.

- | | |
|---------------------|-----------------------------|
| 1. Alphabet-blocks. | 6. Maps. |
| 2. Arithmetic. | 12. Miscellaneous. |
| 3. Astronomy. | 8. Penmanship. |
| 4. Geography. | 9. Reading. |
| 5. Globes. | 10. Slates and blackboards. |
| 13. Kryptography. | |

CLASS 36.—ELECTRICITY. (XVI.)

Sub-classes.

- | | |
|------------------------------|----------------------------|
| 1. Alarms— | 31. Lightning-rods. |
| 2. Burglar. | 75. Locomotion. |
| 3. Annunciators. | 33. Magneto-electric. |
| 82. Anti-inductive devices. | 34. Meters. |
| Applications— | 35. Morse registers. |
| 4. General. | 36. Motors. |
| 5. Tools and machines. | 38. Railway-signals. |
| Batteries— | 39. Recorders. |
| 6. Galvanic. | 40. Regulators. |
| 72. Secondary. | 41. Relays and sounders. |
| 74. Secondary. Applications. | 42. Repeaters. |
| 73. Thermal. | 43. Rheostats. |
| 7. Bells. | 71. Switches. |
| 8. Boat-steering. | 85. Switch-boards. |
| 9. Car-brakes. | 45. Telegraphs— |
| 10. Circuit-closers. | 46. Automatic, |
| 12. Condensers. | 47. Dial. |
| 13. Conductors. | 48. Duplex, |
| 81. Anti-inductive. | 49. Dynamo, |
| 14. Connectors. | 50. Fire, |
| Cut-outs— | 51. Multiplex, |
| 80. Electro-magnetic. | 52. Perforating, |
| 79. Mechanical, | 54. Printing, |
| 78. Thermal. | 55. Quadruplex, |
| 15. Dental instruments. | 56. Railway-car. |
| 16. Electric heaters. | Telephonic telegraphs— |
| Electric lights— | 57. Calls, |
| 17. Arc, | 58. Details, |
| 18. Incandescent, | 59. Electric, |
| 19. Systems and appliances. | 60. Magnetic, |
| 21. Electro-magnets. | 61. Mechanical, |
| 23. Friction-generators. | 62. Radiophones, |
| 76. Hand-machines. | 63. Reed, |
| 25. Incrustation. | 77. Relays and repeaters, |
| 26. Indicators. | 64. Systems. |
| 27. Induction-coils. | 83. Transmission of power. |
| 28. Insulators. | 69. Transmitters. |
| 29. Keys. | 70. Underground lines. |
| 30. Lightning-arresters. | 84. Valve-controllers. |

Sub-classes in Electricity, with Explanatory Notes.

1. ALARMS. Devices for giving audible signals of abnormal or dangerous conditions. (See, also, Annunciators, Circuit-Closers, Indicators and Regulators, and Sub-class 65, Thermostats, in Class 73, Division XXIII.)
2. ALARMS. BURGLAR. Devices for indicating unwarranted interference with structures. (See, also, Circuit-Closers.)
3. ANNUNCIATORS. Visual signals for wants, communications, &c.
82. ANTI-INDUCTION DEVICES. Apparatus for neutralizing the effects upon telephonic or telegraphic receivers due to extraneous induction.

4. APPLICATIONS. GENERAL. Includes applications of electricity not otherwise classified.
 5. APPLICATIONS. TOOLS AND MACHINES. Includes application of electricity to machinery and mechanical implements.
 6. BATTERIES. GALVANIC. Chemical generators of electricity.
 72. BATTERIES. SECONDARY. Appliances for translating electricity into chemical energy and retranslating the same into electricity.
 74. BATTERIES. SECONDARY. APPLICATIONS. Devices and systems which involve the use of secondary batteries.
 73. BATTERIES. THERMAL. Appliances for translating heat directly into electricity.
 7. BELLS. Devices for controlling and actuating bells.
 8. BOAT-STEERING. Devices for controlling and directing torpedo and other boats from a distant point.
 9. CAR-BRAKES. Devices for retarding the movement of vehicles.
 10. CIRCUIT-CLOSERS. Devices for making and breaking circuits—as push-buttons. (Similar devices may be found in nearly all the mechanical classes.)
 12. CONDENSERS. Electro-static accumulators.
 13. CONDUCTORS. Including cables, wires, and means for making and insulating the same; also, special constructions of cables for preventing induction. (See, also, Telegraphs, Lightning-Rods, and Underground Lines.)
 81. CONDUCTORS. ANTI-INDUCTIVE. Conductors specially adapted for neutralizing the effects of extraneous induction in telephonic and telegraphic receivers.
 14. CONNECTORS. Including binding-posts, line-connectors, &c. (See, also, Railway-Car Telegraphs and Lightning-Rods.)
 80. CUT-OUTS. ELECTRO-MAGNETIC. Electro-magnetic devices for automatically cutting out translating apparatus on abnormal strength of current.
 79. CUT-OUTS. MECHANICAL. Hand-switches for cutting out translating devices.
 78. CUT-OUTS. THERMAL. Devices for automatically cutting out translating apparatus on abnormal temperature.
 15. DENTAL INSTRUMENTS. Includes teeth-extractors, drillers, and pluggers.
 16. ELECTRIC HEATERS. Devices for heating or warming by the use of the electric current.
 17. ELECTRIC LIGHTS. ARC. Including apparatus for producing and controlling light by the use of discontinuous conductors.
 18. ELECTRIC LIGHTS. INCANDESCENT. Including apparatus for producing and controlling light by the use of continuous conductors.
 19. ELECTRIC LIGHTS. SYSTEMS AND APPLIANCES. Including methods of distribution and regulation of electric currents for lighting, and apparatus connected therewith. (See, also, Regulators.)
 21. ELECTRO-MAGNETS. Special constructions and arrangements of electro-magnets and their armatures. (Found throughout the class generally, especially in Relays and Sounders and Electric Lights.)
 23. FRICTION-GENERATORS. Generators of static electricity. (See, also, Sub-classes 48, Electric lighting devices, and 49, Portable electric lighting devices, in Class 67, Division XIX.)
 76. HAND-MACHINES. Including machines for signaling, blasting, and medical purposes.
 25. INCrustATION. Means for preventing injurious deposition in steam-boilers.
 26. INDICATORS. Devices for visibly registering and indicating various phenomena. (See, also, Alarms, Annunciators, and Recorders.)
 27. INDUCTION-COILS. Coiled conductors for producing and applying the higher order of currents from varying or intermittent primary currents.
 28. INSULATORS. Insulating bearing-points for line-wires. (See, also, Lightning-Rods.)
 29. KEYS. Hand-lever devices for making and breaking circuit in telegraphic transmission. (See Telegraphs generally.)
 30. LIGHTNING-ARRESTERS. Devices for protecting telegraphic apparatus from lightning.
 31. LIGHTNING-RODS. Devices for protecting structures from lightning. (See, also, Insulators.)
 75. LOCOMOTION. Machines and devices adapted to the propulsion of vehicles by electricity.
 33. MAGNETO-ELECTRIC. Including dynamic generators of electricity for producing currents by magneto-electric induction.
 34. METERS. Including devices for measuring the electric current.
 35. MORSE REGISTERS. Devices for recording telegraph-signals.
 36. MOTORS. Including machines for translating electricity into mechanical power. (See, also, Dental Instruments.)
 38. RAILWAY-SIGNALS. Systems and apparatus for indicating conditions and relations of the way and trains. (See Railway-Car Telegraphs.)
 39. RECORDERS. Devices for making permanent records. (See Morse Registers and Telegraphs generally.)
 40. REGULATORS. Devices for automatically governing currents and machines. (See, also, Electric Lights, Magneto-Electric, and Applications, Tools and Machines, and Sub-class 65, Thermostats in Class 73 Division XXIII.)
 41. RELAYS AND SOUNDERS. Devices for controlling a local circuit by a line-circuit and devices for audibly reproducing telegraphic signals. (See Telegraphs generally.)
 42. REPEATERS. Devices for controlling one line-circuit by another.
 43. RHEOSTATS. Devices for producing artificial resistance.
 71. SWITCHES. Devices for diverting the electric current from one circuit to another.
 85. SWITCH-BOARDS. Apparatus for electrically connecting together two or more outlying circuits.
 45. TELEGRAPHS. Including unclassified systems, circuits, and apparatus.
 46. TELEGRAPHS. AUTOMATIC. Including devices for automatically transmitting and receiving fac-simile messages, Morse and other codes.
 47. TELEGRAPHS. DIAL. Including devices which indicate visually upon dial-faces the desired signals.
 48. TELEGRAPHS. DUPLEX. Including apparatus for transmitting simultaneously two messages in the same or opposite direction over the same line.
 49. TELEGRAPHS. DYNAMO. Including applications of dynamo-electric generators to telegraphic purposes.
 50. TELEGRAPHS. FIRE. Systems of signals, circuits, and apparatus used for indicating fire, and in district telegraphy.
 51. TELEGRAPHS. MULTIPLEX. Including apparatus for transmitting simultaneously three or more messages in the same direction on a single line.
 52. TELEGRAPHS. PERFORATING. Including machines for perforating circuit-controlling strips for automatic transmission.
 54. TELEGRAPHS. PRINTING. Including apparatus for automatically printing in legible characters the messages transmitted.
 55. TELEGRAPHS. QUADRUPLIX. Including apparatus for transmitting simultaneously four messages, two from each end of a single line.
 56. TELEGRAPHS. RAILWAY-CAR. Devices for telegraphing upon railway-trains. (See, also, Railway-Signals.)
 57. TELEPHONIC TELEGRAPHS. CALLS. Including devices at telephone-stations for calling the person with whom it is desired to communicate. (See, also, Bells, and Telephonic Telegraph Systems.)
 58. TELEPHONIC TELEGRAPHS. DETAILS. Including elements of all kinds of telephonic instruments.
 59. TELEPHONIC TELEGRAPHS. ELECTRIC. Including devices for transmitting and reproducing sound by varying the resistance in electric currents.
 60. TELEPHONIC TELEGRAPHS. MAGNETIC. Including devices for transmitting and reproducing sound by means of magnetically-induced currents.
 61. TELEPHONIC TELEGRAPHS. MECHANICAL. Including devices for transmitting and reproducing sound by means of mechanical vibrations.
 62. TELEPHONIC TELEGRAPHS. RADIOPHONES. Including devices for transmitting and reproducing sound by means of radiant energy.
 63. TELEPHONIC TELEGRAPHS. REED. Including devices for transmitting and reproducing sound by means of vibrating tongues.
 77. TELEPHONIC TELEGRAPHS. RELAYS AND REPEATERS. Telephonic instruments for automatic retransmission.
 64. TELEPHONIC TELEGRAPHS. SYSTEMS. Including circuits and apparatus for enabling and facilitating telephonic intercommunication between stations. (See, also, Annunciators and Telephonic Telegraphs. Calls.)
 83. TRANSMISSION OF POWER. Systems and apparatus for transmitting power to distant points by electricity.
 69. TRANSMITTERS. Mechanical devices for sending predetermined code-signals by unskilled operators.
 70. UNDERGROUND LINES. Conduits and conductors for subterranean lines.
 84. VALVE-CONTROLLERS. Electrical devices for regulating and controlling valve movements.
- The following sub-classes of Electricity have been distributed to other divisions, and will be found as indicated below:
- CLOCKS. Devices for actuating, controlling, and synchronizing. (See Sub-class 28, Electric clocks, Class 58, Division XXIII.)
- ELECTROLYSIS. Electric decomposition and deposition. (See Class 75, Metallurgy, Division III, and Class 96, Coating with Metal, Division III.)
- EXPLODING. Devices for igniting explosive charges. (See Class 102, Projectiles, Division XXII.)
- GAS-LIGHTING. Devices for turning on and off and igniting gas. (See Sub-classes 48, Electric lighting devices, and 49, Portable electric lighting devices, Class 67, Division XIX.)
- MAGNETIC LOCKS. Application of magnets to mechanical locks. (See Class 70, Locks and Latches, Division XX.)
- MUSIC-PLAYING. Applications of electricity to musical instruments. (See Class 84, Music, Division II.)
- SEPARATORS. Electric and magnetic separators of heterogeneous matter. (See Sub-class 55, Electric separators, Class 83, Division XXV.)
- TELEGRAPH-POLES. Posts for supporting aerial electric lines. (See, also, Insulators.) (See Sub-class 2, Fence-posts, Class 39, Division II.)

THERAPEUTICS. BATHS. Applications of electricity to baths and bath-furniture for curative purposes. (See Sub-class 30, Baths, Class 123, Division XX.)

THERAPEUTICS. BODY-WEAR. Galvanic devices to be applied to the body for curative purposes. (See Sub-class 31, Body-wear, Class 123, Division XX.)

THERAPEUTICS. ELECTRODES. Circuit terminals for applying electricity to the body. (See Sub-class 29, Electric apparatus, Class 123, Division XX.)

THERMOSTATS. Devices for controlling circuits by changes in temperature. (See, also, Alarms, Electric Lights, Fire-Telegraphs, Indicators.) (See Sub-class 65, Thermostats, Class 73, Division XXXII.)

CLASS 37.—EXCAVATING. (IV.)

Sub-classes.

- | | |
|------------------|------------------------|
| 11. Diggers. | Excavators— |
| 1. Dredgers— | 9. Hydraulic, |
| 13. Agitators, | 10. Rammers, |
| 13. Anchoring, | 17. Wheel. |
| 14. Clam-shell. | 5. Scrapers— |
| 2. Earth-augers. | 19. Submarine, |
| 3. Earth-works. | 7. Wheeled, |
| Excavators— | 6. Self-loading carts, |
| 15. Carrier, | 8. Warping land. |
| 16. Dipper, | |

CLASS 52.—EXPLOSIVES. (VI.)

Sub-classes.

- | | |
|------------------------|---------------------|
| 1. Blasting compounds. | 5. Matches. |
| 2. Fulminates. | 3. Nitro compounds. |
| 4. Gunpowder. | |

CLASS 168.—FARRIERY. (XXVIII.)

Sub-classes.

- | | |
|--------------------------------|-------------------------|
| 1. Calk-sharpeners. | 6. Shoes. |
| 2. Hoof and shoe spreaders. | 7. Shoe-nail clinchers. |
| 3. Hoof cleaners and trimmers. | 8. Shoeing-stands. |
| 4. Hoof-measurers. | 9. Toe-weights. |
| 5. Hoof-pads. | |

CLASS 38.—FELTING AND HATS. (XV.)

Sub-classes.

- | | |
|-----------------------------|---------------------|
| 1. Blocks. | 10. Forming-bats. |
| 2. Blocking and stretching. | 11. Fulling. |
| 4. Brushing and finishing. | 12. Furs and pelts. |
| 5. Conformators. | 14. Ironing. |
| 6. Curling brims. | 15. Pouncing. |
| 7. Fabrics. | 16. Pressing. |
| 8. Felting-machines. | 18. Wiring brims. |
| 9. Flock-cutting. | |

CLASS 39.—FENCES. (II.)

Sub-classes.

- | | |
|-----------------|-------------------------|
| 2. Fence-posts. | 5. Gates— |
| 3. Fences— | 11. Railway, |
| 1. Barbed, | 7. Sliding and rolling, |
| 4. Flood, | 8. Swinging. |
| 6. Iron, | 10. Wire-stretchers. |
| 9. Wire. | |

CLASS 71.—FERTILIZERS. (VI.)

Sub-classes.

- | | |
|------------------|---------------------------|
| 1. Apparatus. | 7. Phosphates. |
| 9. Compositions. | 8. Sewage and night-soil. |
| 6. Organic. | |

CLASS 41.—FINE ARTS. (V.)

Sub-classes.

- | | |
|-------------------------|--------------------------|
| 1. Artists' appliances. | 10. Gilding. Leaf. |
| 2. Artificial flowers. | 12. Medals. |
| 19. Badges. | 21. Metal ornamentation. |
| 3. Banners and flags. | 13. Ornamenting cloth. |
| 4. Canvas-stretchers. | 14. Picture-frames. |
| 5. Decorative painting. | 20. Picture-supports. |
| 6. Drawing-boards. | 15. Pictures. |
| 7. Easels. | 16. Sculpture. |
| 8. Engraving-machines. | 17. Theater appliances. |
| 9. Engraving and tools. | 18. Transfers. |

CLASS 42.—FIRE-ARMS. (XXII.)

Sub-classes.

- | | |
|----------------------------|-------------------------|
| 25. Ball-traps. | 11. Implements. |
| 3. Bayonets. | 12. Locks. |
| 5. Bows and cross-bows. | 27. Muzzle-loaders. |
| 6. Breech-loaders. | 15. Nipples and guards. |
| 8. Catapults. | 16. Pistol-swords. |
| 26. Electrical appliances. | 18. Revolvers. |
| Guns— | 19. Rifling. |
| 1. Air and spring, | 20. Sights. |
| 4. Blow, | 21. Stocks. |
| 7. Cane, | 22. Targets— |
| 13. Magazine. | 24. Flying. |
| 9. Gun-barrels. | 23. Toy pistols. |
| 10. Gun-trimmings. | |

CLASS 169.—FIRE-ENGINES. (IX.)

Sub-classes.

- | | |
|--------------|----------------|
| 1. Chemical. | 3. Stationary. |
| 2. Portable. | |

Sub-Classes in Fire-Engines, with Explanatory Notes.

- FIRE-ENGINES. CHEMICAL.** Apparatus for projecting chemicals for the extinguishment of fires, whether automatic, portable, or stationary.
- FIRE-ENGINES. PORTABLE.** The pumps of steam fire-engines, hand and horse-power fire-engines, water-discharge towers, hydraulic fire-escapes, portable engines where the water is forced by compressed air, hydraulic hose attachments, and all portable engines not chemical, for putting out fires.
- FIRE-ENGINES. STATIONARY.** All fixed systems not chemical for extinguishing fires in buildings, cars, and lint-rooms, together with their pipes, tanks, special sprinklers, valves, and fittings, but does not include lamp and stove extinguishers. (Classes 67 and 126, Division XIX.)

CLASS 159.—FIRE ESCAPES AND LADDERS. (XII.)

Sub-classes.

- | | |
|--------------|----------------|
| 1. Chutes. | Ladders— |
| 4. Friction. | 3. Flexible, |
| 5. Hoists. | 7. Step. |
| 8. Ladders— | 6. Lazy-tongs. |
| 2. Escape, | |

CLASS 43.—FISHING AND TRAPPING. (XXVII.)

Sub-classes.

- | | |
|-----------------------------|----------------------------|
| 2. Decoys. | Insect-destroyers— |
| Fishing— | 5. Fumigators, |
| 3. Fishways, | 8. Moth-extermimators, |
| 4. Floats, | 14. Powder-dusters. |
| 6. Harpoons and spears, | Traps— |
| 7. Hooks, | 18. Bed-bug, |
| 9. Nets and seines, | 19. Cage, |
| 10. Oyster-culture, | 20. Fish, |
| 11. Oyster-dredges, | 21. Impalement, |
| 12. Oyster rakes and tongs, | 22. Insect, |
| 13. Pisciculture, | 23. Jaw, |
| 15. Reels, | 24. Self-set and ever-set, |
| 16. Rods, | 25. Sporting, |
| 17. Sinkers. | 26. Victim-set, |
| Insect-destroyers— | 27. Wire-choker. |
| 1. Catchers, | |

CLASS 50.—FLUID-PRESSURE REGULATORS. (XVIII.)

Sub-classes.

- | | |
|---------|-----------|
| 1. Gas. | 2. Steam. |
| | 3. Water. |

CLASS 44.—FUEL. (XV.)

Sub-classes.

- | | |
|-------------------|--------------------|
| 1. Artificial. | 3. Peat-machines. |
| 2. Fire-kindlers. | 4. Purifying coal. |

CLASS 45.—FURNITURE. (VIII.)

Sub-classes.

- | | |
|-------------------------------------|-----------------------------|
| 1. Book-cases. | 23. Picture-hangers. |
| 2. Book-shelves. | 24. Quilting-frames. |
| 3. Book-supports. | 25. School seats and desks. |
| 4. Brackets. | 28. Soap-holders. |
| 5. Bureaus. | 41. Spittoons. |
| 43. Carpet stretchers and tack-ers. | 42. Spittoon-lifters. |
| 6. Desks. | 30. Table-leaf supports. |
| 7. Drawers. | 31. Tables— |
| 10. Fire-screens. | 8. Drawing, |
| 13. Hat and coat racks. | 9. Extension, |
| 14. Hat-holders. | 11. Folding, |
| 15. Insect-guards. | 17. Kitchen, |
| 16. Kitchen-cabinets. | 26. Self-waiting, |
| 18. Mirrors— | 27. Sewing-machine. |
| 39. Window. | 32. Towel racks and stands. |
| 19. Music stands and portfolios. | 33. Umbrella-stands. |
| 20. Nursery-gates. | 34. Upholstering. |
| 21. Oil-can holders. | 35. Wall-pockets. |
| 22. Packing furniture. | 36. Wall-protectors. |
| 12. Pads and feet. | 37. Wardrobes. |
| | 38. Wash-stands. |

CLASS 46.—GAMES AND TOYS. (XXVII.)

Sub-classes.

- | | |
|----------------------------|---------------------------|
| 1. Automatic toys. | 15. Croquet. |
| 2. Baby-jumpers. | 16. Dice-boxes. |
| 3. Baby-walkers. | 17. Dolls. |
| 4. Balls and bats. | 18. Dumb-hells and clubs. |
| 6. Billiard appliances. | 19. Exercising-machines. |
| 7. Balls, | 20. Game apparatus. |
| 8. Chalk-cups, | 21. Game-boards. |
| 9. Cues, | 22. Hobby-horses. |
| 10. Cue-tip fasteners, | 23. Kites. |
| 11. Cushions, | 24. Masks. |
| 12. Tables, | 25. Playing-cards. |
| 13. Table-levelers. | 26. Roller-skates. |
| 14. Buzzes and whirligigs. | 27. Roundabouts. |

CLASS 46.—Continued.

- | | |
|--------------------------|--------------------------|
| 28. Skaters' appliances. | 34. Swings. |
| 29. Skates. | 35. Toy building-blocks. |
| 30. Skipping-ropes. | 36. Toy money-boxes. |
| 31. Soap-bubble pipes. | 37. Toys. |
| 32. Spinning-tops. | 38. Trundles and hoops. |
| 33. Stilts. | 39. Whistles. |

CLASS 48.—GAS. (III.)

Sub-classes.

- | | |
|-----------------------------|---------------------------|
| 1. Anti-combustion. | Gas— |
| 2. Carbureters— | 8. Coal and water, |
| 24. Carbureting-lamps, | 7. Coal, oil, and water, |
| 25. Gas and air mixers, | 12. Hydrogen, |
| 3. Jet-mixers, | 13. Oil, |
| 26. Oil-feed, Float-valves, | 14. Oil and water, |
| 27. Oil-feed, Rotary, | 19. Water, |
| 23. Revolving. | 20. Wood. |
| 4. Center-seals and by-pass | 22. Gas-distribution. |
| valves. | 11. Gas-holders. |
| 9. Dip-pipes. | 15. Purifiers. |
| 10. Exhausters. | 18. Retort-chargers. |
| Gas— | 23. Retort gas-furnaces. |
| 5. Coal, | 16. Retort-fids. |
| 6. Coal and oil, | 17. Retorts and settings. |

CLASS 49.—GLASS. (XV.)

Sub-classes.

- | | |
|---------------|-----------------------|
| 1. Articles. | 7. Molds. |
| 2. Cutters. | 8. Ornamentation. |
| 4. Enameling. | 10. Plate and window. |
| Furnaces— | 9. Presses. |
| 5. Annealing, | 11. Tools. |
| 6. Melting. | |

CLASS 51.—GRINDING AND POLISHING. (XXVII.)

Sub-classes.

- | | |
|-----------------------------|--------------------------------|
| 1. Abrading materials and | Metal— |
| tools. | 9. Needle-eyes, |
| Glass and stone— | 10. Needles, rods, and points, |
| 3. Curved surfaces, | 12. Plane surfaces, |
| 11. Plane surfaces. | 14. Rumbles, |
| Metal— | 15. Sheet metal and wire, |
| 2. Card-grinding, | 16. Strops, hones, and rifles. |
| 4. Curved surfaces, | Wood— |
| 6. Cutlery-scourers, | 5. Curved surfaces, |
| 7. Edge-tools, | 13. Plane surfaces. |
| 8. Mower and reaper knives. | |

CLASS 53.—HARDWARE-MAKING. (XIII.)

Sub-classes.

- | | |
|-----------------------------------|---------------------------------|
| 1. Bridge-irons. | 11. Leather-workers' hardware. |
| 2. Builders' hardware. | 20. Musical instrument work. |
| 3. Cutlery. | 12. Pens, pencils, and holders. |
| 4. Eyebolts and hooks. | 21. Printing appliances. |
| 5. Fence-barbs of sheet metal. | 13. Spinners and weavers. |
| 6. Ferrules, rings, and thimbles. | 15. Spoons. Manufacture of |
| 8. Gas and water fittings. | 16. Springs. |
| 9. Hardware. (Not specified.) | 17. Sucker-rod joints. |
| 10. Hinges. | 19. Tie-bands. |
| | 18. Umbrella-irons. |

CLASS 54.—HARNESS. (XI.)

Sub-classes.

- | | |
|-------------------------|-------------------------|
| 1. Bonnets and covers. | 12. Harness-saddles. |
| 2. Bridle-bits. | 13. Harness-tools. |
| 3. Bridles and halters. | 16. Horse-boots. |
| 4. Collar-fasteners. | 17. Horse-collars. |
| 5. Collar-machines. | 21. Riding-saddles. |
| 6. Fly-nets. | 22. Spurs and stirrups. |
| 8. Hame-fasteners. | 24. Trace-carriers. |
| 23. Hame-tugs. | 25. Trimmings. |
| 9. Hames. | 26. Tugs. |
| 10. Harness. | 27. Whips. |
| 11. Harness-machines. | |

CLASS 55.—HARROWS AND DIGGERS. (I.)

Sub-classes.

- | | |
|-------------------|--------------------------|
| 1. Clod-crushers. | 7. Pivoted teeth. |
| 2. Forks. | 8. Pivoted tooth-bars. |
| 3. Harrows— | 9. Potato-diggers. |
| 11. Revolving, | 10. Rakes. |
| 13. Rotary, | 12. Rollers and harrows. |
| 19. Wheel, | 14. Shovels. |
| 20. Rotary. | 15. Stalk-choppers. |
| 4. Harrow-teeth. | 16. Stalk-pullers. |
| 5. Hoes. | 17. Stone-gatherers. |
| 6. Land-rollers. | 18. Transplanters. |

CLASS 56.—HARVESTERS. (VII.)

Sub-classes.

- | | |
|---------------------|----------------------|
| 1. Bean-harvesters. | Binders— |
| 34. Binders— | 36. Grain-adjusters, |
| 35. Compressors, | 37. Sheaf-carriers. |

CLASS 56.—Continued.

- | | |
|------------------------------------|----------------------------------|
| 2. Clover-harvesters. | Horse-rakes— |
| 3. Combined rakes and tedders. | 68. Hay-cockers, |
| 4. Corn-harvesters— | 69. Rake-teeth. |
| 38. Binders and droppers, | 19. Lawn-mowers. |
| 39. Cutters, | 20. Manure-forks. |
| 40. Implements, | 33. Miscellaneous. |
| 41. Strippers and buskers. | 21. Mowers— |
| 5. Corn-shockers. | 70. Anomalies, |
| 6. Cotton-harvesters. | 72. Center-cut, |
| 7. Cutting apparatus— | 73. Front-cut, One-wheel |
| 42. Endless, | 74. Front-cut, Two-wheels |
| 43. Guard-fingers and finger-bars, | 76. Rear-cut, One-wheel |
| 44. Reciprocating, | 77. Rear-cut, Two-wheels |
| 45. Rotary, | 75. Reciprocating-gear, |
| 46. Vibrating. | 78. Thrust-cut, |
| 8. Droppers— | 32. Platform adjustments. |
| 47. Direct-tilting, | 22. Reels. |
| 49. Miscellaneous, | 23. Revolving rakes— |
| 48. Opening and closing, | 80. Flop-over, |
| 50. Side-delivery, | 81. Wheel. |
| 51. Swinging and tilting. | 27. Scythes and cradles. |
| 99. Fruit-gatherers. | 24. Seats. |
| 9. Gearing. | 25. Self-binders— |
| 10. Grain-bands. | 82. Clips and prepared bands, |
| 31. Grain wheels and casters. | 83. Cord-knotters, |
| 11. Hand-binders— | 84. General structure, |
| 52. Attachments, | 85. Gleaners and binders, |
| 53. Elevated delivery, Rear | 86. Tension and take-up devices, |
| 54. Elevated delivery, Side | 87. Twisters and tuckers, |
| 55. Flat delivery, | 88. Wire-twisters. |
| 56. Manual traction. | 26. Self-rakers— |
| 12. Hand-rakers. | 89. Endless-carriers, |
| 13. Hay-caps. | 90. Gaveling-tongs, |
| 14. Hay-forks— | 91. Platform-movement, |
| 57. Corkscrew, | 92. Reciprocating horizontal |
| 58. Grapples, | curvilinear, |
| 59. Harpoon, | 93. Reciprocating horizontal |
| 60. Tilting. | rectilinear, |
| 15. Hay-loaders— | 96. Rotary horizontal axis, |
| 61. Endless-belts, | 94. Rotary vertical axis |
| 62. Intermittent, | switch, |
| 63. Lifting-reels, | 95. Rotary vertical axis, no |
| 64. Walking-rakes. | switch, |
| 100. Headers. | 97. Traveling vertical irregu- |
| 16. Hedge-trimmers. | lar path, |
| 17. Hemp and flax harvesters. | 98. Traveling horizontal ir- |
| 18. Horse-rakes— | regular path. |
| 65. Draft-dumpers, | 28. Tedders. |
| 66. Drags, | 29. Thrashers. |
| 67. Hand-dumpers, | 30. Track clearers and dividers. |

CLASS 149.—HIDES, SKINS, AND LEATHER. CHEMICAL TREATMENT OF (VI.)

Sub-classes.

- | | |
|----------------------------|------------------------|
| 2. Bating. | 8. Preserving hides. |
| 4. Coloring and polishing. | 9. Tanning materials. |
| 5. Currying. | 10. Tanning processes. |
| 6. Depilating. | 11. Tawing. |

CLASS 57.—HOISTING. (XII.)

Sub-classes.

- | | |
|------------------------------|----------------------------|
| 2. Barrel-rollers. | Elevators— |
| 34. Blocks and tackles. | 32. Screw, |
| 22. Capstans and windlasses. | 23. Tobacco. |
| 3. Car-movers. | 8. Grain-conveyers. |
| 37. Chutes. | 9. Grapples. |
| 4. Cranes and derricks. | 35. Hatchways. |
| 6. Dumb-waiters. | 11. Hay-slings. |
| 24. Elevator-brakes— | 13. Hoisting-buckets. |
| 25. Retarders, | 33. Jack-screws. |
| 7. Elevators— | 15. Lifting-jacks. |
| 27. Alarm-indicator, | 16. Loading and unloading. |
| 1. Barrel, | 17. Pulleys— |
| 28. Counter-balance, | 5. Differential. |
| 29. Endless-belt, | 18. Skids. |
| 10. Hay, | 19. Stump-extractors. |
| 12. Hod, | 20. Tender-loaders. |
| 14. Ice, | 21. Track-raisers. |
| 30. Inclined, | 36. Warehouse-railways. |
| 31. Lazy-tongs, | |

CLASS 58.—HOROLOGY. (XXIII.)

Sub-classes.

- | | |
|----------------------|--------------------------|
| 3. Clocks. | 15. Time-alarms. |
| 2. Calendar, | 16. Time-checks. |
| 28. Electric, | 31. Time lamp-lighters. |
| 9. Geographical, | 33. Time-signals. |
| 29. Pneumatic. | 17. Watches. |
| 4. Clock-cases. | 18. Watch-balances. |
| 5. Clock-striking. | 19. Watch-barrels. |
| 6. Clock-winding. | 20. Watch-cases. |
| 34. Dials and hands. | 21. Watch-case springs. |
| 8. Escapements. | 22. Watch dust-caps. |
| 10. Metronomes. | 23. Watch-keys. |
| 11. Pendulums. | 32. Watch-maker's tools. |
| 30. Repeaters. | 24. Watch-plates. |
| 12. Safety-wheels. | 25. Watch-regulators. |
| 13. Stem-winders. | 26. Watch-stops. |
| 14. Sun dials. | 27. Watch-winding. |

CLASS 60.—HOSE AND BELTING. (XI.)

Sub-classes.

- | | |
|--------------------|---------------------|
| 1. Belt-fasteners. | 4. Hose and tubing. |
| 2. Belt-machines. | 5. Hose-machines. |
| 3. Belting. | 6. Drive-chains. |

CLASS 61.—HYDRAULIC ENGINEERING. (IV.)

Sub-classes.

- | | |
|------------------|-------------------|
| 1. Aqueducts. | 11. Marine ways. |
| 2. Cable-laying. | 12. Mining. |
| 3. Caissons. | 13. Pile-drivers. |
| 4. Canals. | 14. Piles. |
| 5. Dams. | 15. Sea-walls. |
| 6. Diving-armor. | 16. Tide-powers. |
| 7. Docks. | 17. Tunnels. |
| 8. Drains. | 18. Water-gates. |
| 9. Harbors. | |

CLASS 138.—HYDRAULIC MOTORS. (IX.)

Sub-classes.

- | | |
|-------------------|--------------------------------|
| 1. Oscillating. | Turbine— |
| 2. Reciprocating. | 5. Side ring supply. |
| 3. Rotary. | 6. Top and side direct supply. |
| Turbine— | 7. Top ring supply. |
| 4. Bottom supply, | |

Sub-Classes in Hydraulic Motors, with Explanatory Notes.

HYDRAULIC MOTORS include, beside *Turbines* as defined, Water-wheels, Breast, Overshot and Undershot, and other water-propelled motors.

1. **HYDRAULIC MOTORS. OSCILLATING.** Constructions involving an oscillating piston or cylinder or an oscillating beam operated by one or more buckets alternately filled and discharged.

2. **HYDRAULIC MOTORS. RECIPROCATING.** Constructions involving a reciprocating piston or cylinder.

3. **HYDRAULIC MOTORS. ROTARY.** All rotating hydraulic motors not turbine water-wheels.

TURBINES include those constructions in which the whole bucket-surface of the wheel is supplied with water at the same time and the wheel has no blades or abutments which move relatively to it during its rotation.

4. **TURBINES. BOTTOM SUPPLY.** Those constructions where *any* of the water is supplied to the wheel below a line drawn through the lowest point of its bucket-surface and at right angles to its axis.

5. **TURBINES. SIDE RING SUPPLY.** Those constructions where *any* of the water is supplied to the wheel through three or more ports or chutes below a line drawn through the highest point of the bucket-surface and above a line drawn through the lowest point of its bucket-surface, both lines being at right angles to its axis; also, flanges and casings not specially adapted for other forms of wheels.

6. **TURBINES. TOP AND SIDE DIRECT SUPPLY.** Those constructions where *all* of the water is supplied to the wheel through not more than two chutes or ports and *above* a line drawn through the lowest point of its bucket-surface and at right angles to its axis; also, separate wheels not necessarily belonging to other sub-classes.

7. **TURBINES. TOP RING SUPPLY.** Those constructions where *all* the water is supplied to the wheel through three or more ports or chutes above a line drawn through the highest point of its bucket-surface and at right angles to its axis.

CLASS 162.—INJECTORS AND EJECTORS. (XVIII.)

No sub-classes.

CLASS 63.—JEWELRY. (V.)

Sub-classes.

- | | |
|------------------|---|
| 1. Bracelets. | 11. Metal stock and ornamental wire fabric. |
| 2. Brooches. | 7. Ornamental chains. |
| 3. Ear-rings. | 10. Processes. |
| 4. Finger-rings. | 9. Watch-chain attachments. |
| 5. Gem-setting. | |
| 6. Lockets. | |

CLASS 64.—JOURNALS AND BEARINGS. (XII.)

Sub-classes.

- | | |
|---------------------------|----------------------|
| 1. Anti-friction rollers. | Pulleys— |
| 4. Belt-shifters. | 2. Band, |
| 5. Belt-tighteners. | 8. Expanding. |
| 6. Clutches. | 12. Shaft-casings. |
| 7. Compensating journals. | 13. Shaft-couplings. |
| 9. Flexible shafts. | 14. Shaft-hangers. |
| 10. Journal-boxes. | 15. Sucker-rods. |
| 11. Lubricators. | |

CLASS 65.—KITCHEN AND TABLE ARTICLES. (VIII.)

Sub-classes.

- | | |
|----------------------------------|---------------------|
| 1. Butter-dishes. | 5. Casters. |
| 2. Butter, egg, and table tongs. | 9. Cheese-covers. |
| 3. Cake-turners. | 10. Compound tools. |
| 6. Caster-bottles. | 11. Corkscrews. |

CLASS 65.—Continued.

- | | |
|----------------------------|----------------------------|
| 12. Culinary. | 27. Knife racks and rests. |
| 13. Cups. | 28. Ladles. |
| 14. Dinner-pails. | 29. Napkin-holders. |
| 15. Dishes and plates. | 30. Oyster-openers. |
| 16. Dish-covers. | 31. Pitchers. |
| 17. Dish-holders. | 32. Plate-lifters. |
| 18. Dish-mats. | 33. Provision-safes. |
| 19. Dish stands and trays. | 35. Salt-cellars. |
| 20. Dust-pans. | 36. Scoops. |
| 21. Egg-beaters. | 38. Spice-boxes. |
| 22. Egg-cups. | 41. Tea-service. |
| 23. Fish-scalers. | 42. Tumbler-holders. |
| 24. Fruit and cake dishes. | 43. Twine-holders. |
| 25. Fruit-lifters. | 44. Wire articles. |
| 26. Jar-lifters. | |

CLASS 66.—KNITTING AND NETTING. (XXI.)

Sub-classes.

- | | |
|-----------------------|---------------------------|
| 1. Burrs and sinkers. | 6. Netting. |
| 2. Circular. | 7. Stopping. |
| 3. Darning. | 8. Straight. |
| 4. Fabrics. | 9. Take-ups and tensions. |
| 5. Needles. | 10. Tatting. |

CLASS 67.—LAMPS AND GAS-FITTINGS. (XIX.)

Sub-classes.

- | | |
|-----------------------------------|------------------------------------|
| 43. Calcium and magnesium lights. | Lamps— |
| 1. Candlesticks. | 19. Miners'. |
| 3. Chandeliers. | 20. Safety-tube and central draft, |
| 4. Chimney-holders. | 21. Street. |
| 50. Decorative lights. | 22. Lamp-posts. |
| 5. Drop-lights and hangers. | 23. Lamp-shades. |
| 6. Extinguishers. | 24. Lamp-wicks. |
| 7. Gas-burners. | 25. Lanterns— |
| 40. Gas-extinguishers. | 35. Signal. |
| 8. Gas-fittings. | 46. Submarine, |
| 41. Gas-lighting devices. | 44. Tubular. |
| 9. Gas-regulating burners. | 45. Lantern-holders. |
| 33. Lamp-burners— | 25. Lighting devices— |
| 10. Argand. | 48. Electric. |
| 11. Multiple-wick. | 49. Portable. |
| 12. No-chimney. | 26. Locomotive head-lights. |
| 13. Lamp-chimneys. | 27. Match-safes. |
| 14. Lamp-collars. | 28. Reflectors. |
| 32. Lamps— | 37. Refracting attachments. |
| 39. Bracket, | 34. Signal-lights. |
| 2. Car. | 38. Torches. |
| 42. Cigar-lighting, | 30. Vapor-burners. |
| 16. Forced-draft, | 31. Wick-raisers. |
| 17. Independent-reservoir. | |

CLASS 68.—LAUNDRY. (XXVII.)

Sub-classes.

- | | |
|------------------------------------|---------------------------|
| 1. Bosom-boards. | Washing-machines— |
| 2. Clamps. | 18. Cylinder. |
| 34. Clothes-driers. | 37. Miscellaneous, |
| 3. Clothes-lines. | 19. Pounder, |
| 4. Clothes-pins. | 30. Reciprocating rubber. |
| 5. Clothes-pounders. | 21. Rocking and swinging, |
| 6. Clothes sticks and tongs. | 22. Roller, |
| 7. Fluting-irons. | 23. Roller and bed, |
| 8. Hand-rubbers. | 24. Rotary rubber. |
| 9. Ironing-machines. | 26. Sad-irons. |
| 10. Ironing-tables. | 27. Sad-iron holders. |
| 11. Laundries. | 28. Starching-machines. |
| 12. Line-fasteners. | 35. Wash-benches. |
| 13. Mangles. | 29. Wash-boards. |
| 14. Reels. | 30. Wash-boilers. |
| Washing-machines— | 31. Wash-tubs. |
| 15. Agitator, | 32. Wringers. |
| 16. Boiler. | 33. Wringer-rolls. |
| 17. Combined washing and wringing, | |

CLASS 69.—LEATHER. (XI.)

Sub-classes.

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|-------------|---------------|
| 1. Cutting. | 3. Machines. |
| | 4. Splitting. |

CLASS 70.—LOCKS AND LATCHES. (XX.)

Sub-classes.

- | | |
|-----------------------|---------------------------------|
| 40. Baggage-seals. | Locks— |
| 3. Box-fasteners. | 5. Hasp. |
| 7. Key-fasteners. | 6. Indicator. |
| 8. Key-hole guards. | 18. Permutation, |
| 9. Keys. | 20. Piano, |
| 10. Knobs. | 23. Seal, |
| 11. Knob attachments. | 31. Sliding-door, |
| 12. Knob-roses. | 25. Till, |
| 13. Latches— | 26. Time, |
| 23. Gate, | 27. Trunk. |
| 21. Reversible. | 15. Lock-strikes. |
| 14. Locks— | 16. Lock-trimmings. |
| 1. Alarm, | 29. Locks and latches combined. |
| 2. Bag, | 17. Padlocks— |
| 4. Car-seat, | 19. Permutation. |
| 39. Electric, | 24. Shackles. |

CLASS 115.—MARINE PROPULSION. (XII.)

Sub-classes.

- | | |
|------------------------|-------------------------|
| 3. Crank-paddles. | Propellers— |
| 4. Feathering paddles. | 8. Pneumatic, |
| 7. Paddle-wheels. | 9. Screw, |
| Propellers— | 10. Steering, |
| 1. Buoyant, | 12. Vibrating. |
| 2. Chain, | 11. Towing. |
| 6. Hydranlic, | 13. Wheels in channels. |

CLASS 72.—MASONRY. (IV.)

Sub-classes.

- | | |
|--------------------------|---------------------|
| 2. Cisterns. | 6. Garbage-sinks. |
| 3. Construction. | 7. Iron structures. |
| 4. Fire-proof buildings. | 8. Sewers. |
| 5. Fire-shields. | |

CLASS 73.—MEASURING-INSTRUMENTS. (XXIII.)

Sub-classes.

- | | |
|------------------------------|---------------------------------|
| 1. Air and gas meters. | 30. Piston-meters. |
| 2. Anemometers. | 31. Pressure-gages. |
| 3. Balances. | 32. Pyrometers. |
| 4. Barometers. | 33. Rain-gages. |
| 5. Bathometers. | 34. Recorders. |
| 6. Bevels. | 35. Registers. |
| 7. Calculators. | 36. Rotary measures. |
| 8. Cart-scales. | 37. Rotary meters. |
| 9. Cloth-measuring machines. | 38. Sack-scales. |
| 10. Coin-counters. | 39. Scale-beams. |
| 11. Coin-testers. | 40. Scale-measures. |
| 12. Diaphragm-meters. | 41. Scale-pans. |
| 13. Dividing-engines. | 64. Shoe-makers' measures. |
| 15. Dynamometers. | 42. Specific-gravity apparatus |
| 59. Fare-registers. | 43. Speed-measures. |
| 16. Gages. | 44. Sphygmoscopes. |
| 17. Game-counters. | 45. Spirit-meters. |
| 19. Grain-meters. | 46. Spring-scales. |
| 20. Grain-tallies. | 47. Squares. |
| 21. Grain-tollers. | 66. Surface-gages. |
| 22. Hydrometers. | 43. Tailors' measures. |
| 23. Hydrostatic scales. | 49. Tape-measures. |
| 24. Hygrosopes. | 50. Testing illuminating-fluids |
| 63. Leather-measuring. | 51. Testing-machines. |
| 60. Measuring-fancets. | 52. Thermometers. |
| 61. Measuring-pumps. | 65. Thermostats. |
| 62. Measuring-vessels. | 67. Track-gages. |
| 27. Odometers. | 53. Voting-machines. |
| 28. Oscillating meters. | 54. Water-gages. |
| 58. Passenger-registers. | 55. Weather-vanes. |
| 29. Pendulum-scales. | 56. Weights. |
| 57. Phonographs. | |

CLASS 74.—MECHANICAL POWERS. (XII.)

Sub-classes.

- | | |
|-----------------------------|------------------------------|
| 21. Belt-gearing. | 12. Horse-power treads. |
| 1. Cams and eccentrics. | 13. Machine-brakes. |
| 2. Changing speed. | 14. Mechanical movements. |
| 23. Clutch and brake. | 15. Motors. |
| 4. Converting motion. | 20. Overcoming dead-centers. |
| 5. Cranks and levers. | 16. Pawls and ratchets. |
| 6. Fly-wheels. | 17. Pitmen. |
| 7. Gearing. | 22. Reversing mechanism. |
| 8. Gibs and keys. | 25. Transmitting power. |
| 9. Horse-powers. | 18. Treadles. |
| 10. Horse-power chains. | 19. Universal joints. |
| 11. Horse-power equalizers. | |

CLASS 167.—MEDICINES. (VI.)

Sub-classes.

- | | |
|--------------------------|---------------------------|
| 1. Aerated beverages. | 6. Insecticides. |
| 2. Capsules. | 7. Internal remedies. |
| 3. Disinfectants. | 8. Plasters. |
| 4. Extracts. | 9. Topical remedies. |
| 5. Hair dyes and tonics. | 10. Veterinary medicines. |

CLASS 153.—METAL BENDING AND STRAIGHTENING. (XIII.)

Sub-classes.

- | | |
|-------------------------------|--------------------|
| 1. Bars. Bending | 4. Flanging. |
| 2. Bending and straightening. | 5. Plates. Bending |
| 3. Corrugating and molding. | 6. Twisting. |

CLASS 10.—METAL BOLTS, NUTS, RIVETS, AND SCREWS. (XIII.)

Sub-classes.

- | | |
|---|-------------------------------|
| 1. Bolts and nuts. Dressing and assembling. | 8. Screws. |
| 2. Bolts and rivets. | 9. Screw-blank feeders. |
| 3. Bolts and rivets. Making | 10. Screw-cutting machines. |
| 4. Capping screws and nails. | 11. Screw-sawing machines. |
| 5. Metal-screw machines. | 12. Screw-tapping machines. |
| 6. Nuts and washers. | 13. Screw-threading machines. |
| 7. Nuts and washers. Making | 14. Taps and dies. |
| | 15. Wood-screw machines. |

CLASS 77.—METAL BORING AND DRILLING. (XIII.)

Sub-classes.

- | | |
|------------------------------------|------------------------|
| 1. Bits. | 5. Drills. Hand- |
| 2. Boring and drilling appliances. | 6. Drilling-machines. |
| 3. Boring-machines. | 9. Ratchet-drills. |
| 4. Drill-chucks. | 7. Reamers and drifts. |
| | 8. Tapping maus. |

CLASS 78.—METAL-FORGING. (XIII.)

Sub-classes.

- | | |
|-------------------------|----------------------|
| 1. Anvils. | 8. Olivers. |
| 3. Drop-hammers. | 9. Power-hammers. |
| 4. Forges. | 11. Riveting. |
| 5. Forging and welding. | 15. Upsetting metal. |

CLASS 22.—METAL-FOUNDING. (XIV.)

Sub-classes.

- | | |
|-------------------------------------|-------------------------------|
| Metal molds— | Molded molds— |
| 1. Apparatus and plants, | 28. Molded molds, |
| 2. Chains, hinges, and joints, | 8. Molders' flasks, |
| 4. Hardware, | 29. Molders' materials. |
| 5. Hollow ware, | 17. Molders' tools and arts, |
| 6. Ingots, hollow, pipes, and tube, | 30. Ordnance and projectiles, |
| 7. Ingots, | 31. Pipes, |
| 9. Ingots, compound, | 32. Pipes, horizontal, |
| 10. Ingots, plants, | 3. Pipe-elbows, |
| 11. Materials, | 33. Plants, |
| 12. Ordnance and projectiles, | 34. Plows, |
| 13. Pigs, | 35. Rolls, |
| 14. Plows, | 36. Screw-threads, |
| 15. Rolls, | 37. Tools, |
| 18. Screw-threads, | 38. Vehicle-wheels, |
| 16. Soft-metal machines, | 39. Wheels. |
| 21. Soft-metal molds, | Molding apparatus— |
| 19. Soft-metal shot, | 40. Blacking-molds, |
| 20. Soft-metal spoons, | 41. Hollow ware, |
| 22. Soft-metal traps, | 42. Machines, |
| 23. Vehicle-wheels, | 43. Ordnance and projectiles, |
| 24. Wheels. | 44. Pipes, |
| Molded molds— | 45. Pipes, horizontal, |
| 25. Chains, hinges, and joints, | 46. Pipe-cores, |
| 26. Hardware, | 47. Screw-threads, |
| 27. Hollow ware, | 48. Vehicle-wheels, |
| | 49. Wheels. |

CLASS 75.—METALLURGY. (III.)

Sub-classes.

- | | |
|-------------------------------|--|
| 1. Allays. | Furnaces— |
| 31. Amalgamators— | Hydrocarbon— |
| 34. Electric, | 43. Retort-vaporizers, |
| 35. Lead, | 19. Pigment, |
| 36. Mercury, | 20. Puddling, |
| 37. Plate, | 26. Shaft and shelf. |
| 33. Vacuum, | 12. Hot-blast ovens. |
| 38. Vapor. | 14. Iron and steel direct. |
| 2. Assaying. | 15. Lead. |
| 3. Bessemer metal. | 16. Mechanical puddlers and tools. |
| 4. Blast-furnace accessories. | Metals— |
| 7. Calcining-kilns. | 17. Reducing, refining, and separating |
| 8. Coke and charcoal. | 18. Solution and precipitation of |
| 30. Fume-arresters. | 22. Quicksilver. |
| 10. Furnace-protecting. | 23. Regenerators. |
| Furnaces— | 24. Revolving roasters. |
| 5. Blast, | 25. Roasting-hearths. |
| 29. Crucible, | 28. Spelter. |
| 9. Cupola, | 27. Treating molten iron. |
| 11. Gas, | 39. Tnyeres. |
| 40. For heating blanks, | |
| 41. Hydrocarbon, | |
| 42. Injector-burners, | |

CLASS 79.—METAL PERSONAL WEAR. MAKING (XIII.)

Sub-classes.

- | | |
|------------------------|-----------------------------|
| 1. Buttons and clasps. | 4. Personal wear. |
| 2. Eyelets. | 5. Thimbles. Manufacture of |
| 3. Ornamental chains. | 6. Watches and clocks. |

CLASS 80.—METAL-ROLLING. (XIII.)

Sub-classes.

- | | |
|-------------------------|-------------------------------------|
| 1. Cylindrical. | 6. Railroad-rails. |
| 2. Foil. Manufacture of | 7. Rolling. Miscellaneous |
| 3. Mill appliances. | 9. Sheet and hoop iron manufacture. |
| 4. Piles and fagots. | 10. Taper. |
| 8. Plates and bars. | |
| 5. Puddlers' balls. | |

CLASS 148.—METAL TEMPERING, ANNEALING, AND CEMENTATION. (III.)

Sub-classes.

- | | |
|-------------------------|---------------------------|
| 1. Apparatus. | 4. Sheet and plate metal. |
| 2. Compositions. | 5. Wheels and tires. |
| 3. Metals. (Generally.) | 6. Wire and springs. |

CLASS 76.—METAL TOOLS AND IMPLEMENTS. MAKING

(XIII.)

Sub-classes.

- | | |
|--------------------------------------|--|
| 1. Angers. | 14. Pitchforks. |
| 2. Axes and hatchets. | 15. Plow-irons. |
| 27. Compound metal-working machines. | 16. Rake and harrow irons. |
| 3. Cultivator-irons. | 26. Saw clamps and jointers. |
| 4. Dies. | 19. Saw-setting. |
| 5. Drills. | 22. Saw-sawing. |
| 6. Farm implements. | 17. Saws. |
| 7. File-blanks. | 18. Saws. Gumming |
| 8. File-cutting. | 20. Saws. Sharpening reciprocating tool- |
| 9. Files and rasps. | 21. Saws. Sharpening rotary tool- |
| 10. Hammers. | 23. Seythes. |
| 11. Harvester-irons. | 24. Tools and implements. |
| 12. Hoes and shovels. | 25. Wrenches. |
| 13. Picks and mattocks. | |

CLASS 134.—METAL TUBING AND WIRE. (XIII.)

Sub-classes.

- | | |
|---------------------------------|-----------------------------|
| 1. Coiling and bending pipe. | 5. Plumbers' traps. Making |
| 9. Electric appliances. | 6. Tubes. |
| 2. Lead pipe. Making | 7. Wire making and drawing. |
| 3. Lightning-rods. Making | 8. Wire. Pointing |
| 4. Lining cylinders with metal. | |

CLASS 82.—METAL TURNING, PLANING, AND MILLING.

(XIII.)

Sub-classes.

- | | |
|----------------------------------|---------------------------|
| 1. Centerers. | Planers— |
| 2. Cutters and cutter-holders. | 12. Rotary-bed or cutter. |
| 3. Gages. | 13. Rests. |
| 4. Gear-cutting. | 14. Shaping and slotting. |
| 5. Key-seat cutters. | Turnings— |
| 6. Lathe-chucks. | 15. Irregular forms, |
| 7. Mandrels and work-holders. | 16. Miscellaneous, |
| 8. Milling. | 17. Tapers, |
| 9. Milling cutters. | 18. Wheels and axles. |
| 10. Planer-chucks. | 19. Watch makers' lathes. |
| Planers— | 20. Wrist-pin turners. |
| 11. Reciprocating-bed or cutter. | |

CLASS 81.—METAL-WORKING TOOLS. (XXVIII.)

Sub-classes.

- | | |
|-------------------------------|-------------------------------|
| 23. Cutting sharpeners. | Pipe-wrenches— |
| Nut-wrenches— | 14. Pivoted jaw, with cutter |
| 5. Pivoted and spring-jaw, | 15. Rigid jaw and spanner, |
| 6. Ratchet-wheel, | 16. Sliding jaw, |
| 7. Rigid-jaw, | 17. Sliding jaw, with cutter. |
| 8. Rigid-socket and axle-nut, | 18. Rod and bolt cutters. |
| 9. Sliding-jaw. | 19. Smiths' tongs. |
| Pipe-cutters— | Vises— |
| 10. Inside. | 20. Pipe and rod, |
| 11. Outside. | 21. Smiths', |
| 12. Pipe-expanders. | 22. Wood-workers'. |
| Pipe-wrenches— | |
| 13. Pivoted jaw, | |

CLASS 83.—MILLS. (XXV.)

Sub-classes.

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|--------------------------------|-----------------------------|
| Bagging grain— | Grinding-mills— |
| 25. Bag-fasteners, | 18. Coffee, |
| 26. Bag-holders, | 10. Compound movement, |
| 24. Bags. | 13. Cone and shell, |
| Chop-graders— | 12. Crushing-rolls, |
| 50. Bran-dusters, Beaters | 14. Cylinder and concave, |
| 51. Bran-dusters, Brushes | 7. Disk-action, Horizontal |
| 49. Electric purifiers, | 8. Disk-action, Vertical |
| 42. Flour processes, | 15. Grain-samplers, |
| 40. Gravity, | 16. Grist-alarms, |
| 39. Rotary bolts, | 23. Hominy, |
| 38. Shaking bolts. | 6. Knife-action, |
| Dust-collectors— | 1. Mill-spindles, |
| 47. Reciprocating, | 3. Millstone-dress, |
| 48. Rotating, | 4. Millstone-exhaust, |
| Feed-regulators— | 2. Millstone-trams, |
| 44. Grinding-mill, | 22. Paint, |
| 61. Bolt and prinder. | 11. Rotary beaters, |
| Grain-scourers— | 46. Impact pulverizers. |
| 32. Centrifugal, | Ore and coal— |
| 36. Concave face, | 52. Coal-breakers, |
| 31. Conical, | 53. Crushers, |
| 30. Cylinder, Horizontal | Separators— |
| 29. Cylinder, Vertical | 54. Dry, |
| 37. Disk-face, | 55. Electric, |
| 33. Pestle-action, | 53. Jiggers, |
| 35. Reciprocating and endless, | 59. Washers, |
| 34. Screw-action. | 56. Sifters and screens— |
| Grinding-mills— | 60. Household, |
| 17. Balancing millstones, | 57. Stamps, |
| 9. Ball and drum, | Preparing grain— |
| 21. Bark, | 28. Processes, |
| 19. Cane, | 27. Steaming and dampening. |
| 45. Chasing. | |

CLASS 84.—MUSIC. (v.)

Sub-classes.

- | | |
|---------------------------|-------------------------------|
| 1. Accordions. | 47. Organ wind-chests. |
| 2. Banjos and guitars. | 24. Pedals. |
| 4. Bells. | 25. Pianos. |
| 6. Castanets. | 26. Piano-actions. |
| 7. Clarionets and flutes. | 27. Piano attachments. |
| 8. Cornets and trumpets. | 29. Piano-frames. |
| 9. Couplers. | 29. Piano-legs. |
| 10. Drums. | 30. Piano sounding-boards. |
| 11. Exercising devices. | 46. Piano-violins. |
| 12. Harmonic attachments. | 31. Pianos without strings. |
| 13. Harmonicas. | 32. Pipe-organs. |
| 14. Harps. | 33. Reeds. |
| 48. Indicators. | 34. Reed-boards. |
| 15. Insulators. | 35. Reed-organs. |
| 16. Keys and key-boards. | 36. Reed-organ attachments. |
| 49. Knee-swells. | 37. Self-playing instruments. |
| 17. Leaf-turners. | 51. Pneumatic. |
| 18. Notation. | 38. Steam-organs. |
| 19. Organ-actions. | 40. Stringing pianos |
| 50. Pneumatic. | 41. Transposers. |
| 20. Organ-bellows. | 42. Tremolos. |
| 21. Organ-cases. | 43. Tuning-instruments. |
| 22. Organ-pipes. | 44. Violins. |
| 23. Organ-swells. | |

CLASS 85.—NAILS AND SPIKES. (XIII.)

Sub-classes.

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|------------------------------------|---------------------------|
| 1. Cut-nail making. | 8. Nail-plate feeders. |
| 3. Horseshoe-nail-blank finishing. | 9. Nails and spikes. |
| 2. Horseshoe-nail cutting. | 15. Shoe nails and tacks. |
| 4. Horseshoe-nail forging. | 16. Spike-making. |
| 6. Nail-distributors. | 17. Wrought-nail making. |

CLASS 163.—NEEDLES AND PINS. (XIII.)

Sub-classes.

- | | |
|----------------------------|---------------------------|
| 1. Machine-needles. Making | 5. Pins. Papering |
| 4. Pins. Making | 6. Sewing-needles. Making |

CLASS 151.—NUT AND BOLT LOCKS. (XXVIII.)

Sub-classes.

- | | |
|---------------------------|-----------------------------|
| 1. Base, key and ratchet. | 5. Thread. |
| 2. Base, washer. | 6. Thread, key and ratchet. |
| 3. Side. | 7. Top. |
| 4. Side, key and ratchet. | 8. Top, key and ratchet. |

CLASS 87.—OILS, FATS, AND GLUE. (xv.)

Sub-classes.

- | | |
|---------------------------|------------------------------------|
| 17. Adhesives. | 9. Lubricants. |
| 18. Artificial butter. | 10. Lubricating. Treating oils for |
| 1. Barrel-linings. | 12. Refining fat oils. |
| 2. Bleaching. | 13. Rendering. |
| 3. Candles and apparatus. | 14. Soap. |
| 4. Decomposing fats. | 15. Soap-cutting. |
| 5. Detergents. | 16. Soap-manufacture. |
| 6. Extracting oils. | 19. Wax. |
| 7. Glue. | 20. Wool-oils. |
| 8. Lard-coolers. | |

CLASS 88.—OPTICS. (XXIII.)

Sub-classes.

- | | |
|--------------------------|----------------------------|
| 1. Altitude-instruments. | 20. Optometers. |
| 19. Compasses. | 9. Photometers. |
| 2. Distance-instruments. | 10. Prisms. |
| 3. Heliostats. | 11. Sextants. |
| 4. Kaleidoscopes. | 12. Spectacles. |
| 5. Lenses. | 13. Stakes and targets. |
| 18. Levels. | 14. Stereoscopes. |
| 6. Leveling-instruments. | 17. Surveying-instruments. |
| 7. Magic lanterns. | 15. Telescopes. |
| 8. Microscopes. | 16. Tripods. |

CLASS 89.—ORDNANCE. (XXII.)

Sub-classes.

- | | |
|----------------------------|--------------------------|
| 1. Breech-loading. | 10. Mortars. |
| 2. Carriages. | 11. Muzzle-loaders. |
| 19. Cartridge-feed cases. | 12. Operating ordnance. |
| 3. Counterpoise-carriages. | 22. Pneumatic. |
| 4. Disabling. | 13. Shields. |
| 21. Electrical appliances. | 15. Submarine guns. |
| 7. Loading. | 16. Tompions and valves. |
| 20. Locks. | 17. Trunnions. |
| 9. Machine-guns. | 18. Vents and stoppers. |

CLASS 150.—PACKING AND STORING VESSELS. (xiv.)

Sub-classes.

- | | |
|-----------------------|--------------------|
| Glass and pottery— | Glass and pottery— |
| 11. Bottles and jugs, | Jackets, |
| 42. Bottle-taps, | 74. Wrapper, |
| 43. Boxes and tanks, | 44. Jars, |
| 18. Ejectors, | 73. Clamp, |
| 12. Jackets, | 75. Screw-cap, |
| 81. Stands, | 79. Swing-cover, |

CLASS 150.—Continued.

Glass and pottery—

- Jars,
80. Swing-fastener,
15. Stopper-fasteners,
77. Cap and tie,
86. Swing,
87. Swing-stopper,
16. Stopper-locks,
17. Stoppers,
88. Expanding,
48. Internal,
53. Screw,
49. Valve,
- Metallic vessels—
47. Baskets and crates,
29. Boxes,
85. Blacking,
83. Knockdown,
84. Pocket,
51. Canisters,
30. Cans and unclassified vessels,
54. Casks,
55. Closures,
56. Clamp,
57. Screw-cap,
58. Seam or solder,
52. Coal-scuttles,
32. Ears, bails, and handles,
59. Feeders,
60. Fillers,
33. Hermetic sealing,
61. Jackets and stands, Swing
34. Jackets,
62. Cask,
63. Package,
64. Linings,
35. Liquid-safes, (domestic,)
36. Milk cans and carriers,
37. Nozzles and vents,
65. Screw-cap,
72. Pistons and stirrers,

Metallic vessels—

- Nozzles and vents,
66. Valve,
50. Stop-buckets,
40. Storage and transfer
- Paper vessels—
46. Angular,
89. Folded,
90. Slide,
45. Curved,
82. Barrels and pails.
- Wooden vessels—barrels, buckets, and pails—
1. Bent,
2. Stave,
3. Packages,
4. Bungs and vents,
5. Bung-wrenches,
6. Covers,
7. Hoops,
8. Linings and coverings,
10. Stands,
- Wooden vessels—baskets—
41. Baskets,
91. Covered,
67. Folding,
- Wooden vessels—boxes—
19. Boxes—
18. Bent,
92. Closures,
93. Single blank,
95. Block,
94. Closures,
20. Can and bottle cases,
21. Cell-cases,
68. Cloth and card cells,
69. Paper cells,
70. Wood cells,
71. Wood veneer cells,
22. Crates,
23. Folding boxes and crates,
27. Powders, cases for

CLASS 91.—PAINTING. (VI.)

Sub-classes.

2. Enameling wood.
3. Fireproofing compounds.
4. Graining.
- Ink—
21. Indelible,
5. Printing,
6. Writing,
7. Japanning,
8. Lamp-black,
9. Mixed paints.
20. Painting.
11. Painting-machines.
12. Paint-mixers.
22. Pigments.
13. Stencils.
14. Stove-polishes.
15. Striping.
16. Varnishes.
17. Varnishing-machines.
19. White lead.

CLASS 92.—PAPER-MAKING. (XV.)

Sub-classes.

1. Bleaching.
2. Bronzing-machines.
3. Calendaring.
24. Carpet-lining.
4. Coating.
5. Digesters.
6. Disintegrating fibrous substances.*
7. Fabrics.*
8. Fibers.
9. Flocking.
10. Materials.
11. Molding machines and articles.
12. Ornamenting.
13. Paper-board.
14. Paper-hanging machines.
15. Paper-making machines.
16. Parchment.
17. Processes.
18. Pulp-engines and bed-plates.
19. Pulp washing and straining.
20. Rag flusters and engines.
21. Stock-grinders.
22. Waterproofing and sizing.†
23. Wood-grinders.

*Includes Artificial Leather, transferred from Class 149, and Oil-Cloth, from Class 91.

†Includes Size Preparations, transferred from Class 8, Waterproofing, from Class 149, and Waterproofing Compounds, from Class 91.

CLASS 93.—PAPER-MANUFACTURES. (XVII.)

Sub-classes.

2. Articles.
3. Attaching labels.
4. Bags.
5. Bag-machines.
6. Bank notes, checks, and bonds.
10. Box-machines.
11. Collar, cuff, and bosom machines.
13. Cutters. Reciprocating
14. Cutters. Rotary
15. Envelopes.
16. Envelope-machines.
17. Feeding.
18. Folding.
19. Label and tag machines.
21. Perforating and lace paper.
22. Postage and revenue stamps
23. Tickets.
24. Tube-machines.

CLASS 94.—PAVING. (XV.)

Sub-classes.

2. Gutters.
- Pavements—
1. Concrete.
3. Iron,
5. Stone,
- Pavements—
8. Wood.
4. Road-rammers.
6. Tools.
7. Vanit-covers.

CLASS 95.—PHOTOGRAPHY. (V.)

Sub-classes.

34. Actinometers.
1. Backgrounds and reflectors.
2. Baths. Chemical
3. Baths. Mechanical
4. Burnishers. (Presses.)
5. Cameras.
6. Camera attachments.
7. Camera-stands.
8. Coloring.
30. Combined apparatus.
9. Daguerreotypy.
10. Dark-chambers.
11. Dippers.
12. Embossing.
13. Enameling.
14. Eye-rests.
31. Galleries.
15. Head-rests.
16. Heaters and driers.
17. Mechanical printing.
18. Mounts and mounting.
19. Negatives.
32. Photosculpture.
22. Pictures.
33. Plate-vises.
25. Printing and vignetting.
29. Processes.
26. Retouching.
35. Surfaces.
28. Washing apparatus.

CLASS 97.—PLOWS. (I.)

Sub-classes.

1. Attachments.
2. Beams.
3. Cleaners.
4. Clevises.
5. Corn-coverers.
6. Culters.
7. Couplings.
8. Cotton-choppers.
9. Cotton-scrappers.
10. Cultivators—
20. Parallel,
25. Rotary,
31. Straddle-row,
34. Wheel,
35. Straddle-row.
11. Cultivator-teeth.
37. Draft-eveners.
13. Fenders.
14. Gage wheels and runners.
15. Handles.
17. Landsides.
18. Mold-boards.
21. Plows—
12. Ditching,
16. Hand,
19. Mole,
26. Shovel,
27. Side-hill,
30. Steam,
36. Wheel.
22. Points.
23. Revolving mold-boards.
24. Ridgers.
28. Sod-cutters.
29. Standards.
32. Subsoilers.
33. Weed-turners.

CLASS 98.—PNEUMATICS. (XXVIII.)

Sub-classes.

1. Aerial navigation.
5. Bellows.
6. Blow-pipes.
- Chimneys and cowls—
22. Rotary,
23. Stationary.
28. Fan attachments.
29. Fans. Automatic
27. Toilet.
15. Sand-blowers.
- Ventilation—
7. Car,
10. Grain,
11. House,
12. Mine.
19. Window-ventilators.

Sub-Classes of Pneumatics, with Explanatory Notes.

1. AERIAL NAVIGATION. Balloons and flying-machines and their fittings for navigating the air, but not advertising-balloons, (Class 40, Division V,) toy balloons, (Class 46, Division XV,) signal-balloons, (Class 116, Division XXII,) or balloons for raising sunken vessels, &c., (Class 114, Division XXII.)
5. BELLOWS. Air-forcing devices and fittings involving flexible diaphragms, cylinders, walls, or bags; but not bellows organized for musical instruments (Class 84, Division II) or water-pumps, (Class 103, Division IX.)
6. BLOW-PIPES. Includes all such as jewelers, glass-blowers, plumbers, and assayers use.
22. CHIMNEYS AND COWLS. ROTARY. Cowls which automatically move in whole or part to prevent a draft down through the smoke-flue.
23. CHIMNEYS AND COWLS. STATIONARY. Chimneys and cowls which are designed to prevent a draft down through the smoke-flue and have no moving part.
15. SAND-BLOWERS. Rotary blowers, air-pumps, and bellows specially adapted to throw sand by a blast of air.
7. VENTILATION. CAR. Those constructions whereby fresh air is directly or through filters introduced into the cars, or foul air is forced or drawn out; but does not include cooling air (Class 62, Division XV) or dust-guards for car-windows, (Class 98, Division IX,) or devices involving ventilation as an incident to warming, (Class 126, Division XIX.)
10. VENTILATION. GRAIN. Devices and flues for supplying fresh air to grain in bins, bulk, and stacks, but not devices and methods for drying grain by heat, (Class 34, Division XIX.)
11. VENTILATION. HOUSE. Those constructions whereby fresh air is directly or through filters introduced into the house, or foul air is forced or drawn out; but does not include cooling-air, (Class 62, Division XV,) window-ventilators as defined, (Class 98, Division IX,) or devices involving ventilation as an incident to warming, (Class 126, Division XIX.)
12. VENTILATION. MINE. Those constructions whereby fresh air is directly or through filters introduced into mines and tunnels, or foul air or fire-damp is forced or drawn out; but does not include cooling air (Class 62, Division XV) or devices involving ventilation as an incident to warming, (Class 126, Division XIX.)

19. WINDOW-VENTILATORS. Ventilators depending in whole or part on the raising or lowering of the sash, removable ventilators which are inserted in the open window under or over the sash, devices for preventing moisture on the glass, schemes for ventilating bulk-head windows, and car-window dust-guards, all when mere attachments; but does not include ventilators or dust-guards involving the construction of the window or its frame, nor window-screens, (Class 20, Division IV.)

CLASS 99.—PRESERVING. (VI.)

Sub-classes.

- | | |
|-----------------|----------------------|
| 1. Antiseptics. | 8. Exclusion of air. |
| 2. Apparatus. | 11. Food compounds. |
| 4. Cold. | 9. Fumigation. |
| 5. Desiccation. | 10. Panification. |
| 6. Egg testers. | 12. Wood saturation. |
| 7. Embalming. | |

CLASS 100.—PRESSES. (XII.)

Sub-classes.

- | | |
|--------------------------|------------------------------|
| 2. Bale-band tighteners. | Presses— |
| 1. Bale-ties— | 22. Cotton and hay, |
| 19. Wire. | 23. Ratchet and grapple bar, |
| 3. Baling hay. | 24. Revolving bale-boxes, |
| 9. Flour-packers. | 25. Screw, |
| 10. Fruit-packers. | 26. Toggle-joint, |
| 17. Oil-press mats. | 8. Cork, |
| 18. Paint-exPELLERS. | 11. Fruit, |
| Presses— | 26. Fuel, |
| 4. Cheese, | 12. Hop, |
| 5. Cider and wine, | 13. Lard and oil, |
| 6. Cloth, | 14. Sugar, |
| 7. Cotton and hay, | 15. Tobacco, |
| 20. Bale-ejectors, | 16. Wool. |
| 21. Rack-bar, | |

CLASS 101.—PRINTING. (XVII.)

Sub-classes.

- | | |
|---------------------------|-------------------------------|
| 1. Addressing. | 44. Matrix-making. |
| 2. Autographic. | 45. Metal embossing. |
| 3. Blankets. | 24. Oscillating. |
| 4. Block. | 25. Paging and numbering. |
| 5. Branding-stamps. | 26. Perforating-stamps. |
| 7. Calico and fabric. | 27. Plate. |
| 6. Card, tag, and ticket. | 28. Reciprocating. |
| 8. Chases. | 29. Registering. |
| 9. Chromatic. | 30. Rotary. |
| 10. Composing-sticks. | 31. Rules. |
| 11. Copying. | 32. Setting and distributing. |
| 12. Cylinder. | 33. Spool. |
| 13. Damping. | 34. Stereotyping. |
| 14. Delivering. | 35. Stereotype-blocks. |
| 15. Electrotyping. | 36. Stereotype-plate holders. |
| 16. Friskets. | 37. Surfaces. |
| 17. Furniture. | 38. Types. |
| 18. Galleys. | 39. Type-beds. |
| 19. Glass. | 40. Type-cases. |
| 20. Hand-stamps. | 41. Type-machines. |
| 21. Inking. | 42. Type-writing. |
| 22. Lever-presses. | 43. Warp and yarn. |
| 23. Lithographic. | |

CLASS 102.—PROJECTILES. (XXII.)

Sub-classes.

- | | |
|---------------------------|----------------------|
| 1. Blasting and fuses. | 9. Marine torpedoes. |
| 2. Bomb-lances. | 11. Primers. |
| 3. Cap-boxes. | 12. Projectiles. |
| 4. Cap-filling. | 13. Buckets. |
| 19. Cartridge implements. | 14. Sabots and wads. |
| 5. Cartridge-loading. | 15. Snells. |
| 6. Cartridges— | 16. Shell-fuses. |
| 20. Electric. | 17. Shot-cartridges. |
| 7. Flasks and chargers. | 18. Torpedoes. |
| 8. Lubricating. | |

CLASS 103.—PUMPS. (IX.)

Sub-classes.

- | | |
|------------------------------------|-------------------------------|
| Air-pumps— | 14. Drainage. |
| 47. Hydraulic, | 16. Force. |
| 48. Mechanical, | 17. Hollow piston-rod. |
| 49. Mercury, | 18. Hydraulic elevators. |
| 46. Rotary. | 20. Hydraulic jacks. |
| 45. Accumulators. | 21. Hydraulic presses. |
| 2. Attachments. | 22. Lift. |
| 5. Cattle. | 23. Oil. |
| 6. Chain. | 25. Oscillating. |
| 7. Compound. | 27. Pistons. |
| 8. Compressed-air water-elevators. | 29. Rams. |
| 10. Diaphragm. | 44. Rotary double piston. |
| 11. Double-acting. | 43. Rotary single piston. |
| 12. Double-cylinder. | 31. Sand. |
| 13. Double-piston. | 32. Ship. |
| | 35. Windlass water-elevators. |

Sub-Classes of Pumps, with Explanatory Notes.

47. AIR-PUMPS HYDRAULIC. Constructions whereby air is forced by the direct action of a motor fluid not mercury—as water or steam—but does not include cases involving a mere water seal or air-compressors operated by hydraulic power.

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48. AIR-PUMPS. MECHANICAL. All independent and complete air forcing or exhaust apparatus and details thereof not otherwise classified. Includes, also, air-reservoirs not gas-holders, (Class 48, Division III.)

49. AIR-PUMPS. MERCURY. Constructions whereby air is forced by mercury not a mere seal to a mechanical piston.

46. AIR-PUMPS. ROTARY. All ventilating wheels, blast-machines, forge-blowers, air-compressors, exhaust-fans, water-seal blowers, pressure-blowers, and twin-blowers, but not bellows, (Class 98, Division XXVII.) nor reciprocating piston air-pumps.

45. ACCUMULATORS. Hydraulic and pneumatic devices for multiplying and accumulating power.

2. ATTACHMENTS. An attachment is something auxiliary to a pump or part thereof of ordinary form, and not a mere detail or modification.

5. CATTLE. Devices whereby water is elevated by the action or weight of the animal. If water is merely turned on by the action of the animal, to run into a drinking receptacle, the apparatus belongs in Tanks, (Class 137, Division IX.)

6. CHAIN. Devices whereby water is elevated by buckets that move in a belt.

7. COMPOUND. Schemes, automatic pumps, combined pumps, and motors, water elevating wheels, and constructions which involve more than the primary forms contemplated by the other classes.

8. COMPRESSED-AIR WATER-ELEVATORS. Constructions not ejectors, (Class 162, Division XVIII.) whereby water is elevated by the direct action of a motor-fluid. An apparatus involving a mere permanent air piston or cushion is classified according to the form of the pump. If a vacuum is produced by the condensation of steam, the case belongs to Class 160, Division XVIII.

10. DIAPHRAGM. Pumps having a diaphragm, bellows, or bulb, which is operated, either directly or indirectly, to effect the water; but does not include mere siphon-primers, (Class 137, Division IX.)

11. DOUBLE-ACTING. Pumps in which a single piston or part through which no water is raised draws water every stroke.

12. DOUBLE-CYLINDER. Pumps having two or more cylinders the longitudinal axis of which are on parallel lines, but not in a direct line.

13. DOUBLE-PISTON. Reciprocating pumps not defined as double cylinder or compound, where water is drawn on every stroke by a valved piston, or by two or more pistons, or where the water is forced by pistons having independent piston-rods.

14. DRAINAGE. Pumps especially adapted for forcing drainage and cesspool matter, usually automatic or made with valves especially designed to avoid clogging.

16. FORCE. Pumps in which a single piston or part through which no water is raised draws water only every other stroke.

17. HOLLOW PISTON-ROD. Pumps in which a valved piston draws in water every stroke and discharges it all through the piston-rod.

18. HYDRAULIC ELEVATORS. Fluid-hoisting apparatus and devices and valves especially adapted to be used therewith. Matters relating to the cage, guides, &c., foreign to the motor-fluid belong to Class 57, Division XII.

20. HYDRAULIC JACKS. Portable fluid lifting and forcing jacks and fittings.

21. HYDRAULIC PRESSES. Fluid devices for forcing one or more platens, and pumps especially adapted ther for.

22. LIFT. Pumps having only one piston-rod which is continuous and provided with at least one valved piston, the arrangement being such that water is drawn into the pump only every other stroke.

23. OIL. Pumps and their attachments not adapted to be used anywhere except in oil-wells.

25. OSCILLATING. Pumps having one or more pistons which reciprocate on a curved line or oscillate on a pivot.

27. PISTONS. Only independent pistons and their packing for lift, force, and double-acting pumps. Other pistons are classified with the apparatus to which they relate.

29. RAMS. Apparatus for elevating water by suddenly checking its flow.

44. ROTARY DOUBLE-PISTON. A rotary pump is one which rotates and has no reciprocating piston. Double-piston rotary pumps include those not defined as single-piston.

43. ROTARY SINGLE-PISTON. Pumps having a single rotary piston without any blade or abutment, which, during the rotation of the piston, moves relatively to it.

31. SAND. Pumps especially adapted for raising sand and drillings, and not of general application.

32. SHIP. Pumps and arrangements of suction-pipes especially adapted to vessels, and not of general application.

35. WINDLASS WATER-ELEVATORS. Apparatus whereby water is elevated by buckets that do not move in a belt.

CLASS 104.—PUNCHING AND SHEARING. (XIII.)

Sub-classes.

- | | |
|------------------|------------------------------|
| 1. Cutting. | 5. Shears. Lever and sliding |
| 2. Punching. | 4. Shears. Rotary |
| 3. Sawing metal. | |

CLASS 105.—RAILWAY-CARS. (X.)

Sub-classes.

- | | |
|----------------------|-----------------------------|
| 1. Axle-boxes. | 29. Stock. |
| 2. Axle-box lids. | 31. Street. |
| 3. Axle-lubricators. | 11. Changeable gage-trucks. |
| 4. Axles. | 12. Couplings. |
| 5. Baskets. | 13. Draw-bars. |
| 6. Brakes— | 17. Locomotives. |
| 7. Automatic, | 18. Mail-bag catchers. |
| 8. Rail. | 20. Platform. |
| 9. Brake-shoes. | 21. Safety-bridges. |
| 10. Bumpers. | 24. Springs. |
| Cars— | 25. Stake-holders. |
| 14. Dumping, | 26. Starters. |
| 15. Freight, | 27. Starters and brakes. |
| 16. Hand, | 35. Straps. |
| 19. Passenger, | 30. Street-car poles. |
| 22. Safety, | 32. Trucks. |
| 23. Sleeping, | 33. Wheel-fenders. |
| 28. Steam street, | 34. Wheels. |

CLASS 104.—RAILWAYS. (IV.)

Sub-classes.

- | | |
|----------------------|-------------------------|
| 49. Buffers. | 25. Switch-stands— |
| 1. Car-replacers. | 39. Interlocking. |
| 2. Chairs. | 13. Tank-feeders. |
| 40. Crossings. | 14. Track— |
| 3. Deadening noise. | 44. Fastenings, |
| 4. Elevated— | 45. Portable, |
| 41. Cable-rail. | 46. Stringers and ties. |
| 50. Foot-guards. | Track-cleaners— |
| 5. Frogs. | 36. Centrifugal, |
| 7. Hose-bridges. | 37. Dumping, |
| 8. Inclined plane. | 38. Elevators, |
| 9. Pneumatic. | 52. Melters, |
| 10. Rails. | 51. Snow-plows, |
| 11. Rail-joints. | 34. Wheel-fenders. |
| 21. Signals— | 16. Track-layers. |
| 42. Automatic alarm, | 17. Track-platforms. |
| 31. Detonating, | 18. Traction— |
| 27. Pneumatic, | 35. Grippers, |
| 22. Switch, | 47. Underground. |
| 43. Single rail. | 48. Transfer-tables. |
| 12. Switches— | 19. Turn-tables. |
| 23. Automatic, | 20. Ways. |
| 26. Pneumatic, | |
| 24. Tramway. | |

CLASS 62.—REFRIGERATION. (XV.)

Sub-classes.

- | | |
|---------------------------|-----------------------------|
| 1. Air-cooling apparatus. | 8. Implements. |
| 2. Beer-coolers. | 10. Refrigerators. |
| 3. Corpse-coolers. | 11. Refrigerator-buildings. |
| 4. Ice-cream freezers. | 12. Refrigerator-cars. |
| 5. Ice-crushers. | 13. Water-coolers. |
| 6. Ice-machines. | 14. Wine-coolers. |
| 7. Ice picks and shavers. | |

CLASS 108.—ROOFING. (IV.)

Sub-classes.

- | | |
|-------------------|-----------------------|
| 1. Battening. | 5. Roofs. |
| 2. Eaves-treughs. | 6. Slate and shingle. |
| 3. Feuders. | 7. Tile. |
| 4. Metallic. | |

CLASS 109.—SAFES. (XX.)

Sub-classes.

- | | |
|-------------------|--------------------|
| 1. Burglar-proof. | 2. Fire-proof. |
| | 3. Safe bolt-work. |

CLASS 111.—SEEDERS AND PLANTERS. (I.)

Sub-classes.

- | | |
|-------------------------------|---------------------------|
| 1. Broadcast— | 19. Grain-drill cleaners. |
| 2. Hand, | 24. Land-markers. |
| 3. Revolving hoppers, | 25. Pivoted seed-cups. |
| 4. Walking. | Planters— |
| 5. Check-row. | 6. Corn, |
| 8. Cups on belt. | 7. Cotton, |
| 9. Cups on disk. | 16. Foot, |
| Drills— | 20. Hand, |
| 35. Adjustable rank, | 21. Oscillating, |
| 18. Grain, | 22. Reciprocating, |
| 36. Walking. | 23. Rotating, |
| 10. Drills and broadcast com- | 27. Potato, |
| bined. | 28. Walking, |
| 11. Drill-teeth. | 32. Walking, |
| 12. Elastic feed-wheels. | 33. Vibrating hoppers. |
| 34. Fertilizer-distributors— | 26. Plungers. |
| 13. Hand, | 29. Preparing seed. |
| 14. Revolving hoppers, | 20. Rolling hoppers. |
| 15. Walking. | 31. Screw-feed. |
| 17. Force-feed. | |

CLASS 112.—SEWING-MACHINES. (XXIV.)

Sub-classes.

- | | |
|-------------------------|----------------------------|
| 35. Attachment-holders. | 3. Braiders and corders. |
| 1. Binders. | 4. Button-hole. |
| 2. Bobbin-winders. | 5. Chain and double chain. |

CLASS 112.—Continued.

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|-------------------------------|--------------------------------|
| 7. Embroidering. | 19. Sewing looped fabrics. |
| 8. Feeding. | 32. Sewing on buttons. |
| 36. Glove-sewing machines. | 20. Sewing shoes. |
| 9. Guides. | 21. Short-thread. |
| 10. Hemmers. | 22. Shuttle-machines. |
| 34. Methods. | 23. Shuttles and bobbins. |
| 29. Miscellaneous parts. | 24. Special machines. |
| 11. Needles. | 25. Straw. |
| 37. Needle-clamps. | 26. Take-ups. |
| 13. Presser-feet and lifters. | 39. Tensions. |
| 14. Quilting. | 33. Thread-cutters. |
| 38. Revolving hooks. | 6. Trimmers. |
| 15. Revolving-hook machines. | 27. Tuck creasers and markers. |
| 16. Rufflers and gatherers. | 12. Tucking-guides. |
| 17. Running-stitch. | 40. Turning fabrics. |
| 18. Setters and threaders. | 28. Wax-thread. |
| 31. Sewing hats. | |

Sub-classes of Sewing-Machines, with Explanatory Notes.

35. ATTACHMENT-HOLDERS. Devices adapted to secure different kinds of attachments in proper position relative to the sewing mechanism.
1. BINDERS. Attachments for guiding a binding and the fabric, to the edge of which it is to be secured to the sewing mechanism.
2. BOBBIN-WINDERS. Attachments for winding or filling the bobbins or spools of shuttles and rotary hooks.
3. BRAIDERS AND CORDERS. Attachments for guiding braids or cords to the sewing mechanism.
4. BUTTON-HOLE. Machines and attachments for sewing over-edge or zigzag stitches for working the edges of button-holes or fabrics, or ornamenting fabrics.
5. CHAIN AND DOUBLE CHAIN. Machines for forming chain or loop stitches with one thread and double chain or double loop stitches with two threads, respectively.
7. EMBROIDERING. Machines and attachments for ornamenting fabrics with thread.
8. FEEDING. Includes improvements which relate to feeding mechanisms only.
36. GLOVE-SEWING MACHINES. Machines for sewing the seams of gloves.
9. GUIDES. Attachments for guiding fabrics to the sewing mechanism.
10. HEMMERS. Attachments for turning hems and guiding the fabrics to be hemmed to the sewing mechanism.
34. METHODS. Particular methods of forming stitches and peculiar methods of sewing.
29. MISCELLANEOUS PARTS. Sundry devices or machines not properly classifiable under other heads.
11. NEEDLES. Sewing-machine needles only.
37. NEEDLE-CLAMPS. Devices for securing the needle to the needle-bar.
13. PRESSER-Feet AND LIFTERS. Presser-feet and devices for raising the same when the work is to be removed or inserted; also, mechanisms for automatically lifting the presser-foot at each stitch.
14. QUILTING. Machines for sewing several seams simultaneously by means of multiplex stitch-forming mechanisms; also, attachments to ordinary machines for holding fabrics to be quilted.
38. REVOLVING HOOKS. Includes improvements in hooks and loopers, oscillating or revolving, and means for attaching the same to the shaft.
15. REVOLVING-HOOK MACHINES. Machines for forming lock-stitches by means of a needle and a co-operating rotary hook which carries the needle-thread around a locking-thread from a bobbin or spool which is in most instances stationary.
16. RUFFLERS AND GATHERERS. Attachments for forming ruffling, plaiting, and shirring, either by means of a tension-plate which checks the movement of one of two strips of fabric, thus permitting the other to be moved faster by the feeding device, or by means of reciprocating-blades or other moving devices.
17. RUNNING-STITCH. Machines which crimp the fabric and feed the same on to a stationary threaded needle, thus forming the ordinary hand running stitch.
18. SETTERS AND THREADERS. Attachments for properly setting the needle in the needle-bar and for threading the same.
31. SEWING HATS. Machines and attachments for sewing linings, bindings, &c., to hats.
19. SEWING LOOPED FABRICS. Special machines for uniting the edges of knitted goods by sewing.
32. SEWING ON BUTTONS. Machines and attachments for sewing buttons to fabrics.
20. SEWING SHOES. Machines for sewing the soles of boots and shoes to their uppers.
21. SHORT-THREAD. Machines other than running-stitch machines using measured lengths of thread, in contradistinction to these machines which sew with continuous threads.
22. SHUTTLE-MACHINES. Machines which form the lock-stitch by means of a needle and a co-operating shuttle.
23. SHUTTLES AND BOBBINS. Includes improvements in shuttles and bobbins, or spools for the same.

24. **SPECIAL MACHINES.** Machines for doing special kinds of work not otherwise properly classifiable.
25. **STRAW.** Machines for sewing straw braid into hats and bonnets.
26. **TAKE-UPS.** Includes improvements which relate to take-up devices only.
29. **TENSIONS.** Includes improvements which relate to tension devices only.
33. **THREAD-CUTTERS.** Devices for cutting the threads when the work is to be removed from the machine.
6. **TRIMMERS.** Attachments for trimming off the edges of the work simultaneously with the sewing.
27. **TUCK CREASERS AND MARKERS.** Attachments for creasing or marking the work simultaneously with the formation of a seam, to indicate where the fabric is to be folded to form the succeeding tuck.
12. **TUCKING-GUIDES.** Guiding attachments for forming plaits.
40. **TURFING FABRICS.** Apparatus for inserting a loop or a series of loops of pile, yarn, rags, &c., through perforations made in a foundation fabric.
28. **WAX-THREAD.** Machines for sewing leather, &c., with waxed threads; also, thread-waxing devices for such machines.

CLASS 113.—SHEET-METAL WARE. MAKING. (XIV.)*Sub-classes.*

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|-----------------------------|---------------------------|
| 23. Burnishing. | 11. Tools, |
| 1. Cutting printers' leads. | 12. Troughs and moldings. |
| 2. Edging sheets. | Tubing— |
| 3. Roller-tools. | 13. Curved and spouts, |
| 4. Screw-thread bending. | 14. Grooving and seaming. |
| 5. Seaming sheets. | 15. Pipe-elbows, Making |
| Soldering— | 16. Straight, Making |
| 6. Clamps, | Vessels— |
| 7. Irons, | 17. Angular, Bending |
| 25. Heaters, | 18. Curved, Bending |
| 8. Machines, | 19. Die-seaming, |
| 26. Dip, | 20. Die-shaping, |
| 10. Solder-shapes. | 21. Roller-seaming, |
| 24. Spinning. | 22. Wiring and flanging. |

CLASS 114.—SHIPS. (XXII.)*Sub-classes.*

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|-----------------------------------|--------------------------------|
| 1. Anchors. | 26. Ice boats and breakers. |
| 2. Anchor-trippers. | 27. Implements. |
| 3. Armor-clad. | 28. Iron. |
| 4. Ballasting. | 29. Leak-stoppers. |
| 5. Berths, cabins, and furniture. | 30. Light and air ports. |
| 6. Bilge-water. Discharging | 32. Masts and spars. |
| 9. Building. | 33. Raising sunken vessels. |
| 10. Cables and cable-stoppers. | 34. Reefing and furling sails. |
| 12. Camels. | 35. Sails and rigging. |
| 14. Center-boards and keels. | 36. Scows. |
| 15. Cleats and belaying-pins. | 37. Scuppers and hawse-holes. |
| 16. Couplings and tow-lines. | 38. Steamboat-chimneys. |
| 17. Dead-lights. | 39. Steering. |
| 18. Decks and hatches. | 40. Submarine and torpedo. |
| 19. Fire-extinguishers. | 41. Surge-relievers. |
| 21. Floating-docks. | 42. Travelers. |
| 22. Form. | 43. Turrets. |
| 23. Gangways and bridges. | 44. Valve and port stoppers. |
| 24. Hanks, cringles, and hoops | 45. Ventilating. |
| 25. Hawser-clamps. | |

CLASS 116.—SIGNALS. (V.)*Sub-classes.*

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|-------------------------|--------------------------|
| 1. Alarms. | 18. Nautical signals. |
| 32. Annunciators. | 19. Pneumatic signals. |
| 9. Car-signals. | 20. Pyrotechnic signals. |
| 11. Fire-alarms. | 22. Semaphores. |
| 12. Flag-staff holders. | 23. Shoal-alarms. |
| 13. Fog-signals. | 26. Speaking-tubes. |
| 31. Indicators. | 27. Station-indicators. |
| 15. Leak-alarms. | |

CLASS 117.—SILK. (XXI.)*Sub-classes.*

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|-----------------|----------------|
| 1. Assorting. | 5. Silk. |
| 2. Cleaning. | 6. Stretching. |
| 3. Cocooneries. | 7. Throwing. |
| 4. Doubling. | 8. Winding. |

CLASS 118.—SPINNING. (XXI.)*Sub-classes.*

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|----------------------------------|--------------------------|
| 1. Bobbin and cop builders. | 8. Hemp, flax, and hair. |
| 2. Bobbins, fiars, and spindles. | 9. Mules and jacks. |
| 3. Bolsters and steps. | 10. Ring-frames. |
| 15. Cop-builders. | 11. Rings and travelers. |
| 4. Cop-tubes. | 12. Stopping. |
| 5. Domestic. | 13. Throstles and caps. |
| 6. Doubling. | 14. Twisting-heads. |
| 7. Drawing and evening. | |

CLASS 120.—STATIONERY. (XXVIII.)*Sub-classes.*

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|-----------------------|-----------------------------------|
| 3. Ballot-boxes. | 19. Pen-holders. |
| 4. Bill-files. | 20. Pen and pencil cases. |
| 5. Blotters. | 21. Pen racks and cleaners. |
| 6. Calendars. | 22. Pencils. |
| 7. Copy-holders. | 23. Pencil-clasps. |
| 9. Erasers. | 24. Pencil and crayon holders. |
| 10. Fare-boxes. | 25. Pencil-sharpeners. |
| 11. Fountain-pens. | 26. Post-office boxes. |
| 12. Hand-rests. | 28. Scholars' companions. |
| 13. Inkstands. | 29. Slate and blackboard rubbers. |
| 14. Letter-boxes. | 30. Sponge-cups. |
| 15. Macilage-holders. | 35. Stylographic pens. |
| 16. Paper-clips. | 32. Ticket-cases. |
| 17. Paper-weights. | 33. Ticket-reels. |
| 18. Pens. | |

CLASS 160.—STEAM AND VACUUM PUMPS. (XVIII.)*No sub-classes.***CLASS 122.—STEAM-BOILERS. (XVIII.)***Sub-classes.*

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|---|----------------------------------|
| 1. Attachments. | 11. Indicators. |
| 2. Cleaners. | 12. Introducing smoke and gases. |
| 3. Coverings. | 13. Rotary. |
| 5. Circulation. | 14. Sectional. |
| 22. Feeders. | 15. Separators. |
| 6. Fire-tube. | 16. Superheaters. |
| 7. Flashers. | 17. Tubes and flues. |
| 8. Flue and tubular. | 23. Vapor-generators. |
| 20. Heating feed-water. | 3. Vertical. |
| 21. Heating feed-water, steam-injected. | 27. Water-tube. |
| 10. Incrustation. | 18. Water fire-boxes. |

CLASS 110.—STEAM-BOILER FURNACES. (XVIII.)*Sub-classes.*

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|----------------------|------------------------------|
| 14. Attachments. | 6. Grates and grate-bars— |
| 1. Bagasse. | 10. Hollow, |
| 2. Draft-regulators. | 9. Pulverized-fuel. |
| Furnace-feeding— | 12. Smoke and gas, returning |
| 3. Air, | 7. Spark-arresters— |
| 4. Fuel. | 13. Conductors. |
| 5. Furnaces. | |

CLASS 121.—STEAM-ENGINES. (XVIII.)*Sub-classes.*

- | | |
|-----------------------------|------------------------------------|
| 1. Attachments. | 13. Portable, traction, and dummy. |
| 2. Beam-engines. | 14. Rotary— |
| 3. Compound. | 30. Concentric piston, |
| Condensers— | 31. Eccentric piston, |
| 25. Injector. | 34. Oscillating piston, |
| 26. Surface. | 36. Impact. |
| 5. Direct-acting. | 23. Speed-governors— |
| 34. Disk-engines. | 37. Centrifugal, |
| 6. Exhaust mechanism. | 38. Marine. |
| 27. Exhaust, regenerated. | 15. Steam and air brakes— |
| 7. Fire-engines. | 35. Attachments. |
| 9. Locomotives. | 16. Steam-hammers. |
| 10. Locomotive attachments. | 22. Steam-mufflers. |
| 35. Multiple cylinder. | 17. Steam pumping-engines. |
| 11. Oscillating. | 18. Steam rock-drills. |
| Packing— | 19. Steam steering-engines. |
| 23. Compound and textile, | 20. Traps. |
| 29. Rod, | 21. Valve-gear— |
| 12. Pistons and metallic, | 33. Shifting eccentric. |
| 32. Steam-joint. | |

CLASS 136.—STEAM-ENGINE VALVES. (XVIII.)*Sub-classes.*

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|--------------------|---------------------|
| 1. Balanced-slide. | 12. Reversing. |
| 2. Cut-off. | 7. Rotary. |
| 3. Gage-cocks. | 9. Safety. |
| 4. Governor. | 8. Slide. |
| 5. Piston. | 10. Steam-actuated. |
| 6. Puppet. | 11. Throttle. |

CLASS 161.—STEAM WATER-ELEVATORS. (XVIII.)*No sub-classes.***CLASS 125.—STONE-WORKING. (XXII.)***Sub-classes.*

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|----------------------------------|-----------------------------|
| 2. Channeling-machines. | 12. Millstone paint-staffs. |
| 3. Chucks for rock-drills. | 13. Millstone-picks. |
| 4. Diamond-tools. | 14. Mining-machines. |
| 5. Dressing slate. | 15. Monuments. |
| 6. Dressing stone. | 18. Sawing stone. |
| 10. Drills. | 19. Tools. |
| 11. Millstone-dressing machines. | |

CLASS 126.—STOVES AND FURNACES. (XIX.)*Sub-classes.*

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|------------------|---------------|
| Boilers— | Boilers— |
| 1. Agricultural, | 17. Steamers, |
| 16. Domestic, | 84. Stand. |

CLASS 126.—Continued.

- Burners—
 71. Hay and straw,
 49. Refuse.
 9. Coffee and tea pots.
 12. Corn-poppers.
 11. Dampers—
 11. Automatic.
 20. Fenders.
 21. Fire-logs.
 22. Fire-places—
 89. Blowers.
 64. Fire-backs,
 23. Fronts,
 21. Grates,
 70. Hot-air.
 25. Fire-pots and linings.
 27. Foot warmers.
 90. Fur-boxes.
 Furnaces—
 76. Crenation,
 37. Hot-air,
 86. Steam,
 43. Magazine,
 91. Hydrocarbon,
 46. Portable.
 28. Glue-pots.
 29. Grates—
 78. Rotary.
 31. Gridirons.
 Heaters—
 5. Barrel,
 73. Car,
 75. Pendant,
 74. Steam,
 15. Dish,
 21. Flat-iron,
 40. Lunch,
 82. Solar,
 51. Steam,
 32. Heating-drums.
 34. Hot-air registers.
 Ovens—
 4. Bakers',
 19. Domestic.
57. Paint-breamers.
 Pans—
 2. Ash,
 3. Bake,
 80. Frying.
 15. Platforms.
 17. Pot and lid lifters.
 81. Pots and kettles.
 18. Ranges.
 51. Shovel, tongs, and pokers.
 83. Snow and ice melters.
 72. Steam-radiator attachments.
 63. Steam-radiators.
 47. Steaming-tables.
 55. Stove doors and windows.
 66. Stove-hoods.
 57. Stove-legs.
 58. Stove-lids and tops.
 59. Stove-pipes.
 61. Stove-pipe shelves.
 61. Stove-pipe thimbles.
 62. Stove-shelves.
 Stoves—
 10. Cooking.
 11. Hearths,
 11. Magazine,
 60. Reservoir,
 71. Steam,
 55. Gas.
 51. Heating—
 92. Central air-tube,
 54. Horizontal-body,
 11. Hot-air,
 55. Open-front,
 36. Panel,
 1. Parlor,
 29. Lamp,
 14. Magazine,
 12. Fire-place,
 4. Vapor.
 13. Tea-kettles.
 85. Waffle-irons.

CLASS 127.—SUGAR AND SALT. (XV.)

Sub-classes.

1. Bleaching cane-juice.
 2. Bone-black.
 3. Centrifugal machines.
 4. Confectionery.
 6. Cube sugar.
 5. Cutters and crushers.
 7. D-facating.
 8. Diffusion apparatus.
 9. Evaporating-pans.
 10. Glucose.*
 19. Graining and draining.
 11. Mixers.
 12. Molds and carriages.
 13. Mill-machines.
 14. Refining salt.
 15. R-facating sugar.
 16. S-d-facating.
 17. Sugar-making.
 18. Vacuum-pans.

*Includes Dextrine and Starch, transferred from Class 8.

CLASS 128.—SURGERY. (XX.)

Sub-classes.

2. Atomizers.
 3. Bandages.
 4. Breast pumps.
 32. Capsule-machine.
 5. Catamential sacks.
 9. Depurators.
 10. Ear.
 23. Electric apparatus—
 30. Baths.
 31. Body-wear.
 11. Eye.
 13. Inhalers and respirators.
 15. Medical spoons.
 23. Miscellaneous.
 16. Movement cure.
 17. Nasal douches.
 18. Nipples.
 19. Nursing-bottles.
 20. Obstetrics.
 21. Possaries.
 22. Pharmaceutical.
 23. Scarificators and lancets.
 24. Speculums.
 25. Syringes.
 26. Trusses.
 27. Veterinary.

CLASS 129.—TANNING. (XI.)

Sub-classes.

2. Preparing hides.
 3. Stretching.
 4. Tanning.
 5. Tanners' tools.
 6. Tan-vats.
 7. Dressing.

CLASS 130.—THRASHING. (XXV.)

Sub-classes.

1. Bind cutters and feeders.
 31. Cane-strippers.
 2. Cb-cr-hullers.
 3. Corn-cribs.
 4. Corn-husking implements.
 5. Corn-husking machines.
 Corn-shellers—
 6. Breast and cylinder,
 7. Disk-action,
 8. Peripheral action,
 9. Ear-grasping,
 10. Implements.
 12. Fans and regulators.
 13. Flax-threshers.
 14. Graines and bins.
 Grain separators—
 17. Gravity,
 18. Oat, seed, and garlic,
 Grain-separators—
 16. Rotary screens,
 19. Screens and riddles,
 15. Shaking screens,
 20. Stackers.
 Straw-carriers—
 21. Endless aprons,
 22. Overhung rakes,
 23. Reels,
 24. Shaking tables,
 25. Vibrators,
 26. Walking-rakes.
 Thrashing-machines—
 27. Cylinder-machines,
 29. Dust-conveyers,
 28. Flail-machines,
 30. Vine and seed strippers.

CLASS 131.—TOBACCO. (II.)

Sub-classes.

1. Boxes, cases, and pouches.
 2. Cigars, cigarettes, and cartridges.
 18. Cigar-bundling machines.
 3. Cigar-cutters.
 4. Cigar holders and stands.
 5. Cigar-machines.
 24. Continuous filler,
 24. Roller,
 25. Stationary belt,
 26. Traveling belt.
 19. Cigar-makers' implements.
 20. Cigar perforators.
 27. Coloring and flavoring.
 28. Coloring and flavoring machines.
 6. Curling.
 29. Dressing-machines.
 7. Granulating.
 8. Leaf-treating machine.
 30. Moistening apparatus.
 9. Molding cigars.
 10. Mouth-pieces.
 11. Packing-machines.
 12. Pipes and stems.
 13. Pipe-cleaners.
 14. Plug-making.
 15. Plugs.
 31. Smoking-tobacco.
 32. Smoking-tubes.
 16. Snuff-manufacture.
 32. Substitutes.
 Tobacco cutters—
 33. Pivoted-knife,
 34. Reciprocating,
 35. Rotary.
 21. Tobacco-hangers.
 36. Wrappers.

CLASS 132.—TOILET. (V.)

Sub-classes.

1. Barbers' appliances.
 2. Bathing appliances.
 4. Combs.
 4. Crimping and curling.
 5. Hair-pins.
 6. Hair and wigs.
 7. Jewel-boxes.
 8. Mustache-guards.
 9. Nail and ear cleaners.
 14. Pins.
 11. Toilet-cases.
 12. Tooth-picks.
 13. Tweezers.

CLASS 47.—TREES, PLANTS, AND FLOWERS. (II.)

Sub-classes.

2. Bouquet-holders.
 4. Flower pots and stands.
 6. Grafting.
 11. Hedge-training.
 7. Hop-culture.
 14. Plant and tree culture.
 8. Plant and tree protectors.
 10. Propagation.
 11. Sap spouts.
 12. Trellises.

CLASS 133.—TRUNKS. (XI.)

Sub-classes.

1. Accoutrements.
 2. Awnings.
 3. Cartridge-boxes.
 4. Mail-bags.
 5. Package-holders.
 6. Portfolios and pocket-books.
 8. Tents.
 9. Traveling-bags.
 10. Trunks.

CLASS 135.—UMBRELLAS AND CANES. (V.)

Sub-classes.

2. Canes.
 3. Combined cane and umbrella.
 4. Covers.
 5. Drip-cups.
 7. Handles and sticks.
 8. Rihs and stretchers.
 9. Runners and notches.
 10. Tip caps.
 12. Umbrella-supporters.

CLASS 146.—VEGETABLE CUTTERS AND CRUSHERS. (II.)

Sub-classes.

8. Apple-parers.
 Crushers and graters—
 15. Reciprocating,
 9. Rotary.
 Cutters—
 10. Bread,
 10. Green-corn,
 7. Reciprocating,
 Cutters—
 11. Rotary.
 2. Fruit-squeezers.
 3. Nut-crackers.
 14. Peelers and washers.
 6. Pitters, corers, and eye-cutters.
 5. Shellers and seeders.

CLASS 152.—WAGON, CAR, AND TRACK IRONS. (XIII.)

Sub-classes.

1. Car axles and boxes, Making
 2. Car and locomotive irons.
 3. Carriage clips and shackles.
 4. Carriage-irons, Miscellaneous
 5. Car-wheels and tires.
 6. Fifth-wheels, Making
 7. Railway-chairs.
 8. Repairing and capping rails.
 9. Tire-heating furnaces.
 10. Tire-upsetting.
 11. Track-irons, Miscellaneous
 12. Wagon axles and boxes, Making
 13. Wagon tires and fellies, Making

CLASS 141.—WASHING APPARATUS. (XXVII.)

Sub-classes.

6. Barrel-washers.
 7. Bottle and can washers.
 8. Combined dish cleaners and
 9. Dish cleaners.
 10. Dish-cloth holders.
 11. Dish-drainers.
 12. Pitching casks.
 13. Pot-scrapers.
 3. Tumbler-washers.
 5. Wool-washing machines.

CLASS 137.—WATER-DISTRIBUTION. (IX.)

Sub-classes.

1. Aquariums.
 32. Check-valves.
 Cocks and faucets—
 26. Compound,
 Cocks and faucets—
 4. Reciprocating valves,
 5. Sliding gates,
 27. Tank,

CLASS 137.—Continued.

- Cocks and faucets—
 6. Tube-compressors;
 7. Turning plugs.
 9. Cut-offs and spouts.
 10. Filters.
 11. Fountains.
 12. Funnels.
 33. Hose-patches.
 13. Hydrants and plugs.
 14. Irrigating and sprinkling.
16. Mains and pipes.
 17. Nozzles.
 Pipe-couplings—
 28. Detachable,
 29. Permanent,
 30. Valved.
 18. Sampling-tubes.
 20. Siphons.
 21. Tanks.
 31. Water-supply hose-holders.

Sub-Classes in Water-Distribution, with Explanatory Notes.

1. **AQUARIUMS.** Tanks for the exhibition of live fish when there is no water-jet.
32. **CHECK-VALVES.** Only those of general application. Check-valves especially designed for use with a particular apparatus are classified therewith.

COCKS AND FAUCETS include only stop-valves of *general application*. Those not of general application are classified with the apparatus to which they relate.

26. **COCKS AND FAUCETS. COMPOUND.** Those constructions in which two or more through-parts are controlled.

4. **COCKS AND FAUCETS. RECIPROCATING VALVES.** Those constructions in which a single through-passage is closed by a part which moves away from and against its seat and does not slide across it, and those constructions in which a tube reciprocates to close a single through-passage.

5. **COCKS AND FAUCETS. SLIDING GATE.** Those constructions in which a part, not a tube, moving in a *straight* line slides across a port to close a single through-passage.

27. **COCKS AND FAUCETS. TANK.** Stop-valves having special means for attaching them to tanks, barrels, &c., air-vent valves, faucet-bushings and bung-closers, and valves specially organized to be used with tanks, barrels, &c. Valves in bodies of ordinary faucet form merely are classified according to their character.

6. **COCKS AND FAUCETS. TUBE-COMPRESSORS.** Those constructions where an elastic tube is compressed to close it.

7. **COCKS AND FAUCETS. TURNING PLUGS.** Those constructions in which a plug, disk, or cylinder having a port through which the water passes rotates on its axis, but does not reciprocate, to close a single through passage; and those constructions in which a part moving in a circular line slides across a single through-passage to close it.

9. **CUT-OFFS AND SPOUTS.** Sheet-metal rain-water spouts and conductors, and cistern cut-offs and filters therefor.

10. **FILTERS.** Independent and complete apparatus for removing the mechanical impurities from liquids by straining, also sugar-filters, bone-black filters, water-filters not organized as water-coolers, filter-presses not expressing-presses, (Class 100, Division XII;) but does not include filtering-funnels, (Class 137, Division IX.)

11. **FOUNTAINS.** Stationary and house fountains, aquariums with water-jets, and portable automatic fountains.

12. **FUNNELS.** Lamp-funnels, bottle and jar funnels, bung-funnels, funnel-holders, valved and vented funnels, filtering-funnels, and funnel-strainers, but not measuring-funnels, (Class 73, Division XXIII.)

33. **HOSE-PATCHES.** Stops and clamps for temporarily stopping leaks in hose-pipes.

13. **HYDRANTS AND PLUGS.** Fire and domestic hydrants, fire-plugs, and street-washer boxes and covers, together with their valves and fittings.

14. **IRRIGATING AND SPRINKLING.** Lawn-sprinklers, clothes-sprinklers, watering carts, permanent curb and street sprinklers, portable lawn-sprinklers, watering-pots, liquid poison and insect redistributors for plants, and track-sprinklers attached to cars, but not mere sprinkling-tips, which are classed with nozzles, (Class 137, Division IX.) Includes, also, irrigating pipes, ditches, and schemes, but not ditching-plows, (Class 97, Division I,) or excavating, (Class 37, Division IV,) or drains, (Class 61, Division IV.)

16. **MAINS AND PIPES.** The construction of water and gas mains, water-supply systems, sediment and fish traps for water-pipes, protectors for the threaded ends of pipes, water-hammer preventers, schemes for preventing water-pipes from bursting, wood in pipes, tapping water-mains, (but not drills, Class 77, Division XII,) tube-stoppers, service-pipe systems, air-valves for mains, wastes for water-pipes, house-reservoirs and service-pipe attachments, preventing and detecting waste of water, supplying upper stories with water, *water-corks*, stand-pipes, apparatus for thawing frozen pipes, supplying water to buildings and rooms, and cleaning mains.

17. **NOZZLES.** Single and twin or siamese hose-nozzles, and discharge-tips for fountains, sprinklers, &c., except those especially adapted for automatic fire-extinguishers, (Class 169, Division IX.)

8. **PIPE-COUPPLINGS. DETACHABLE.** Pipe-couplings and parts thereof adapted to be joined and unjoined by merely removing screws, keys, nuts, bolts, thimbles, &c.

29. **PIPE-COUPPLINGS. PERMANENT.** Pipe-couplings which are partially or wholly destroyed in separating, and not adapted to be unjoined and joined by merely removing thimbles, screws, nuts, bolts, keys, &c.

30. **PIPE-COUPPLINGS. VALVED.** Complete concentrated couplings, made in two parts, each of which is adapted to be connected to a hose or pipe, and one or both of which parts is provided with a valve that is opened when the parts are coupled and closed when the parts are uncoupled.

18. **SAMPLING-TUBES.** Barrel-thiefs, hydrometer-pumps, and devices for removing a column of liquid from a reservoir to illustrate the character of the strata.

20. **SIPHONS.** Includes, besides siphons, siphon primers and starters.

21. **TANKS.** Railway watering columns and tanks, and apparatus for supplying water to stock-tanks and drinking-troughs, together with their fittings.

31. **WATER-SUPPLY HOSE-HOLDERS.** Constructions whereby the water is supplied to the hose-holder, from which it passes into the hose connected thereto.

CLASS 139.—WEAVING. (XXI.)

Sub-classes.

- | | |
|--------------------------|------------------------------|
| 1. Bag. | 26. Needle-loom. |
| 2. Basket. | 21. Pickers. |
| 3. Button-hole. | 22. Picker-checks. |
| 5. Carpet-rag looper. | 23. Pile-fabric looms. |
| 6. Chenille— | 21. Reeds and reed-making. |
| 40. Machines. | 25. Shedding. |
| 7. Circular. | 26. Shirred-fabric machines. |
| 8. Cross-weaving. | 27. Shuttles. |
| 9. Fabrics. | 23. Shuttle-boxes. |
| 41. Fringe-machines. | 29. Shuttle-checks. |
| 10. Fringes. | 30. Shuttle-guards. |
| 11. Hair cloth. | 31. Shuttle-notions. |
| 12. Hand-loom. | 32. Slat, cane, and straw |
| 13. Heddle-machines. | 33. Special machines. |
| 14. Heddles. | 34. Stopping. |
| 15. Irregular. | 35. Take ups and let-offs |
| 16. Jacquard mechanisms. | 36. Temples. |
| 17. Lappet. | 37. Tying-in warps. |
| 18. Looms. | 38. Weft-forks. |
| 19. Narrow-ware. | 39. Wire. |

CLASS 157.—WHEELWRIGHT-MACHINES. (XXII.)

Sub-classes.

- | | |
|--------------------------|--------------------------|
| 1. Axle-gages. | 8. Tire-setters. |
| 2. Boring hubs. | 9. Wheelwright-machines. |
| 3. Carriage-bow setters. | |

CLASS 170.—WIND-WHEELS. (XXVIII.)

Sub-classes.

- | | |
|--------------------------------|--------------------------|
| Wind-wheels— | Wind-wheels— |
| 1. Horizontal, | 3. Vertical solid-wheel. |
| 2. Vertical feathering-blades, | |

CLASS 140.—WIRE-WORKING. (XIV.)

Sub-classes.

- | | |
|-------------------------------|--------------------------------|
| 1. Barbing— | Fabrics— |
| 12. Sheet-metal, | 20. Working. |
| 22. Tools. | 21. Feeding and tension. |
| 3. Bending. | 13. Heddles, Making |
| 4. Bending and coiling. | 14. Joining. |
| 5. Bending and twisting. | 15. Reels and spools. |
| 6. Coiling. | 16. Tools. |
| 7. Covering. | 17. Wiring bottles and corks — |
| 8. Cutting and straightening. | 14. Brushes and cards, |
| 9. Fabrics— | 19. Wood, |
| 10. Making. | 11. Fences. |

CLASS 143.—WOOD-SAWING. (XXII.)

Sub-classes.

- | | |
|------------------------------|------------------------------|
| 1. Band-saw mills. | 13. Resawing. |
| 3. Circular-saw mills. | 14. Saws. |
| 4. Circular sawing machines. | 15. Saw-backs. |
| Circular sawing— | 25. Saw-guards. |
| 22. Angular, | 26. Saw-guides. |
| 23. Radial, | 16. Saw-hanging. |
| 24. Circular saws. Traveling | 17. Saw-mill appliances. |
| 5. Edgers. | 18. Saw-mill dogs. |
| 6. Fire-wood circular saws. | 27. Saw-table gages. |
| 7. Fire-wood drag-saws. | 19. Saw-teeth. |
| 9. Head-blocks. | 20. Sawing shingles. |
| 11. Log-turners. | 21. Scroll-sawing machines. |
| 12. Reciprocating-saw mills. | 22. Tubular sawing machines. |

Sub-Classes in Wood-Sawing, with Explanatory Notes.

1. **BAND-SAW MILLS.** Machines using an endless flexible saw.
3. **CIRCULAR-SAW MILLS.** For sawing logs, a power-driven carriage is usually present. Sub-class A, using a saw or saws which cut through the log; B, using top saw or saws; C, saw-carriage-feed devices.

4. CIRCULAR SAWING MACHINES. For sawing on a table without a power-driven carriage.
22. CIRCULAR SAWING. ANGULAR. Circular saws arranged at an angle to the plane of the table or work.
23. CIRCULAR SAWING. RADIAL. Saws arranged to make cuts radial to the log.
24. CIRCULAR SAWS. TRAVELING. Revolving saw is carried to the work.
5. EDGERS. Two or more circular saws on a shaft, usually adjustable relatively to each other.
6. FIRE-WOOD CIRCULAR SAWS. Circular sawing machines adapted to cross-cut rough sticks.
7. FIRE-WOOD DRAG-SAWS. A, levers and connecting devices for reciprocating a saw across the timber; B, crank connections for same purpose.
9. HEAD-BLOCKS. The set-works for moving a log on its carriage.
11. LOG-TURNERS. Machines for turning logs by power.
12. RECIPROCATING-SAW MILLS. A, machines with carriages for feeding logs or timber to a reciprocating saw, which is generally hung in a gate; B, for sawing in other than straight lines; C, for light work, having a positive feed.
13. RESAWING. For dividing sawed stuff, usually at an angle. Generally with gages at each side of the work.
14. SAWS. Wood-saws with solid teeth, where the invention is in the plate or disk.
15. SAW-BUCKS.
25. SAW-GUARDS. Shields to prevent accidents.
26. SAW-GUIDES. Devices to prevent vibration of the saw.
16. SAW-HANGING. Devices for holding saws on arbors or in gates.
17. SAW-MILL APPLIANCES. Attachments—as brakes, wheels, log-decks, saw-dust conveyers, &c.
18. SAW-MILL DOGS. Devices to clamp the log to the saw-carriage.
27. SAW-TABLE GAGES. For guiding the work on the table.
19. SAW-TEETH. Insertible teeth and fastenings.
20. SAWING SHINGLES. For sawing beveled pieces, and having devices for shifting the bolt so as to produce the bevel.
21. SCROLL-SAWING MACHINES. Jig-sawing machines where the feed is by hand or under the immediate control of the operator.
28. TUBULAR SAWING MACHINES. The saw is a hollow cylinder.

CLASS 142.—WOOD-TURNING. (XXII.)

Sub-classes.

- | | |
|------------------------|----------------------------|
| 9. Irregular forms. | 3. Lathe appliances. |
| Lathes— | 8. Oval forms. |
| 12. Automatic spindle, | 16. Polygonal forms. |
| 2. Gage, | Regular forms— |
| 13. Many spindle, | 17. Lateral-movement, |
| 14. Single-chuck, | 18. Longitudinal-movement. |
| 15. Tubular-cutter. | |

Sub-Classes in Wood-Turning, with Explanatory Notes.

9. TURNING IRREGULAR FORMS. Lathes having essentially revolving work-spindle, revolving pattern, and a bearing-surface which rests on the pattern and controls the movement of the work-spindle or the rotary cutter.
12. AUTOMATIC SPINDLE-LATHES. Lathes in which the spindles close on the work, usually for turning spools, buttons, &c.
2. GAGE-LATHES. Lathes having a revolving work-spindle, a traveling cutter, and fixed pattern for guiding the cutter.
13. MANY-SPINDLE LATHES. Lathes with a series of spindles which usually move past a series of cutters.
14. SINGLE-CHUCK LATHES. Lathes in which the work is chucked to a single spindle.
15. TUBULAR-CUTTER LATHES. A hollow revolving cutting-mandrel, through which the work is fed.
3. LATHE APPLIANCES. Attachments for wood-lathes.
8. TURNING OVAL FORMS. Spindle of lathe has double or eccentric motion.
16. TURNING POLYGONAL FORMS. Lathes in which the work-spindles have an intermittent rotary motion, the cutters acting when the spindles are at rest.
17. TURNING REGULAR FORMS. LATERAL-MOVEMENT. Simple lathes in which the cutter moves laterally toward the work.
18. TURNING REGULAR FORMS. LONGITUDINAL-MOVEMENT. Same as above, with cutters made to move lengthwise of the stick, or nearly so.

CLASS 144.—WOOD-WORKING MACHINES. (XXII.)

Sub-classes.

- | | |
|--------------------------|-----------------------|
| 1. Bending wood. | 10. Cutting dye-wood. |
| 2. Boring. | 11. Cutting gears. |
| 48. Boring and reaming. | 14. Dovetailing. |
| 4. Carving. | 50. Gaining. |
| 49. Chain-cutters. | 51. Machine-tables. |
| 6. Clothes pin machines. | 16. Matches. Making |
| 8. Comb-making. | 75. Match-trays. |
| 9. Cutter-heads. | 47. Mitering. |

CLASS 144.—Continued.

- | | |
|-------------------------------|-----------------------------|
| Molding— | 27. Planing and matching. |
| 52. Clamped-work, | 28. Planing and sawing. |
| 53. Hand-fed, | 67. Punching-cutters. |
| 54. Lateral-feed, | 29. Rossing bark. |
| 55. Pattern-feed, | 68. Routing. |
| 56. Special-feed, | Sashes and blinds— |
| 57. Straight-feed. | 31. Making, |
| Mortising— | 74. Tenoning |
| 58. Auger-cutters, | 69. Shaving. Fixed-knife |
| 59. Chisel and auger cutters, | Slicers— |
| 60. Chisel-cutters, | 70. Beveling, |
| 61. Rotary cutters. | 71. Reciprocating, |
| 19. Osier-peelers. | 72. Rotary and oscillating. |
| 20. Packing shingles. | 36. Slivering. |
| 22. Pencil-wood. Making | 37. Special work. |
| 23. Planer attachments— | 38. Splitting and bundling. |
| 62. Feed, | 73. Tenoning and boring. |
| 63. Pressers and rolls. | 40. Universal joiners. |
| Planers— | 45. Working rattan. |
| 64. Beveling, | 46. Wiring blinds. |
| 65. Rotary-cylinder, | 42. Wooden pins. Making |
| 66. Rotary-disk, | 43. Wooden trays. Making |
| 25. Sliding. | 44. Wood ornamentation. |

Sub-Classes in Wood-Working Machines, with Explanatory Notes.

1. BENDING WOOD. Machines for bending and holding bent sticks.
2. BORING. Machines which operate with a simple rotary bit or bits.
48. BORING AND REAMING. Machines which have reamers for enlarging as well as augers for boring holes.
4. CARVING. Machines for following the contour, usually with cutter on the end of spindle at right angles to the face of the work.
49. CHAIN-CUTTERS. Endless chains carrying cutting-blades.
6. CLOTHES-PIN MACHINES. For removing the wood between the legs of clothes-pins.
8. COMB-MAKING. Machines for slitting the spaces between the comb-teeth, usually circular saws with intermitting feed devices for the comb-blanks.
9. CUTTER-HEADS. Rotary heads with cutting-blades, (other than saws and augers.)
10. CUTTING DYE-WOOD. Chip-making machines.
11. CUTTING GEARS. Machines with cutters for forming gear-teeth, and generally a step-by-step feed.
14. DOVETAILING. Machines with rotary cutters or saws arranged at angles to the wood, which is fed in straight lines.
50. GAINING. Machines with rotary cutting-tools having their axes parallel (or nearly so) to the surface in which a groove is cut.
51. MACHINE-TABLES.
16. MATCHES. MAKING.
75. MATCH-TRAYS. A device for receiving, clamping, adjusting, or preparing the splints for dipping, &c., and which may be connected to, or disconnected from, the match-machine proper.
47. MITERING. For cutting bevels on wood. A, cutting by means of saws; B, cutting by knives or planers.
52. MOLDING. CLAMPED WORK. The blank is clamped, and the cutter advanced to operate on it.
53. MOLDING. HAND-FEED. The material is shaped by rotary cutters on axes parallel to the surface cut, the feed being under immediate control of the operator.
54. MOLDING. LATERAL-FEED. Machines with rotary cutters on axes parallel to the surface operated on, the blank being fed to the cutter and then withdrawn.
55. MOLDING. PATTERN-FEED. The material is shaped by cutters the feed being in a direction fundamentally regular but modified by transverse movements produced by patterns, cranks, or cams.
56. MOLDING. SPECIAL-FEED. The work is shaped by rotary cutters, the feed being in curved, tortuous, or irregular lines.
57. MOLDING. STRAIGHT-FEED. The work is passed directly under or over shaping-cutters.
58. MORTISING. AUGER-CUTTERS. Slots are formed by augers which first bore a hole to the required depth, and then move sideways, cutting at the side.
59. MORTISING. CHISEL AND AUGER CUTTERS. Augers followed or accompanied by chisels which enlarge and square the hole bored.
60. MORTISING. CHISEL-CUTTERS. Machines with reciprocating chisel.
61. MORTISING. ROTARY CUTTERS. For cutting mortises by means of rotary, oscillating, or chain cutters, the axis of the cutter being parallel to the surface of the wood.
19. OSIER-PEELERS.
20. PACKING SHINGLES.
22. PENCIL-WOOD. MAKING.

23. **PLANER ATTACHMENTS.** Miscellaneous attachments for planing-machines.
62. **PLANER ATTACHMENTS.** FEED.
63. **PLANER ATTACHMENTS.** PRESSERS AND ROLLS.
64. **PLANERS.** BEVELING. For planing tapered articles—as shingles, &c.—by rotary cutters.
65. **PLANERS.** ROTARY-CYLINDER. Planer with rotary cutter-head on axis parallel with face of bed; knives on cylindrical surface of cutter.
66. **PLANERS.** ROTARY-DISK. Planers with rotary disk having knives on the flat surface, which is parallel with the bed of machine. Traversing planers.
25. **PLANERS.** SLIDING. Planers with fixed or reciprocating knives, the work being fed to the knife or the knife reciprocated over the work.
27. **PLANING AND MATCHING.** Planers with matcher-heads attached.
28. **PLANING AND SAWING.** Planers with circular saws or edges attached.
67. **PUNCHING-CUTTERS.**
29. **ROSSING BARK.**
68. **ROUTING.** Rotary cutters with their axes at right angles to the surface operated on, and capable of lateral movement over such surface, for panel-raising, &c.
31. **SASHES AND BLINDS.** MAKING. Machines for.
74. **SASHES AND BLINDS.** TENONING. Cutting round tenons on blind-slats by rotary cutters, against which the slats rotate.
69. **SHAVING.** FIXED-KNIFE. The work fed continuously to the stationary knife.
70. **SLICERS.** BEVELING. Machines with reciprocating or rotary splitting-knives, to which the work is fed by mechanism.
71. **SLICERS.** RECIPROCATING. Machines with reciprocating splitting-knives.
72. **SLICERS.** ROTARY AND OSCILLATING.
36. **SLIVERING.** Machines with sets of fine knives for making toothpicks, excelsior, &c.
37. **SPECIAL WORK.** Machines for special purposes, (as gluing, driving parts together, fastening cane-seats, felling trees, &c.)
38. **SPLITTING AND BUNDLING.** For fire-wood.
73. **TENONING AND BORING.** Cutting round tenons by hollow augers which may be replaced or accompanied by boring-augers.
40. **UNIVERSAL JOINERS.** Machines for performing several operations simultaneously or successively.
45. **WORKING RATTAN.**
46. **WIRING BLINDS.**
42. **WOODEN PINS.** MAKING
43. **WOODEN TRAYS.** MAKING
44. **WOOD ORNAMENTATION.** By cutting or embossing.

CLASS 145.—WOOD-WORKING TOOLS. (XXII.)

Sub-classes.

- | | |
|-------------------------|---------------------------|
| 1. Augers. | 23. Handsaws. |
| 2. Auger-handles. | 12. Hammers and hatchets. |
| 3. Bench-dogs. | 13. Hollow augers. |
| 4. Bench-planes. | 15. Nail-extractors. |
| 5. Bit-stocks. | 16. Saw-handles. |
| 6. Box-openers. | 17. Screw-drivers. |
| 7. Box-scrapers. | 18. Spoke-shaves. |
| 22. Cant-dogs. | 19. Tools. |
| 8. Chisels. | 24. Tools for machines. |
| 9. Clamps. | 20. Tool-handles. |
| 10. Chalk-line holders. | 21. Work-benches. |
| 11. Gages. | |

SUBJECTS OF INVENTION.

Subjects of invention are divided into one hundred and sixty-four classes, and assigned for examination to the twenty-eight Examining Divisions of this Office, as follows:

DIVISION I.—EXAMINER FOX.

Classes.

55. Harrows and Diggers.
97. Plows.
111. Seeders and Planters.

DIVISION II.—EXAMINER BLODGETT.

Classes.

6. Bee-Culture.
17. Butchering.
119. Care of Live Stock.
31. Dairy.
39. Fences.
131. Tobacco.
47. Trees, Plants, and Flowers.
146. Vegetable Cutters and Crushers.

DIVISION III.—EXAMINER CATLIN.

Classes.

7. Brewing and Fermenting.
96. Coating with Metal.
124. Distillation.
48. Gas.
75. Metallurgy.
148. Metal Tempering, Annealing, and Cementation.

DIVISION IV.—EXAMINER POND.

Classes.

14. Bridges.
20. Carpentry.
37. Excavating.
61. Hydraulic Engineering.
72. Masonry.
104. Railways.
108. Roofing.

DIVISION V.—EXAMINER BURKE.

Classes.

40. Advertising.
41. Fine Arts.
63. Jewelry.
84. Music.
95. Photography.
116. Signals.
132. Toilet.
135. Umbrellas and Canes.

DIVISION VI.—EXAMINER ANTISELL.

Classes.

8. Bleaching and Dyeing.
23. Chemicals.
52. Explosives.
71. Fertilizers.
149. Hides, Skins, and Leather. Chemical Treatment of
167. Medicines.
91. Painting.
99. Preserving.

DIVISION VII.—EXAMINER BOYD.

Class.

56. Harvesters.

DIVISION VIII.—EXAMINER WHITAKER.

Classes.

- 5. Beds.
- 107. Bread, Cracker, and Lozenge Making.
- 155. Chairs.
- 156. Curtains, Shades, and Screens.
- 45. Furniture.
- 65. Kitchen and Table Articles.

DIVISION IX.—EXAMINER BROWN.

Classes.

- 1. Aeration and Bottling.
- 4. Baths and Closets.
- 169. Fire-Engines.
- 138. Hydraulic Motors.
- 103. Pumps.
- 137. Water-Distribution.

DIVISION X.—EXAMINER SANDERS.

Classes.

- 21. Carriages and Wagons.
- 105. Railway-Cars.

DIVISION XI.—EXAMINER CHAPMAN.

Classes.

- 12. Boots and Shoes.
- 24. Clasps and Buckles.
- 54. Harness.
- 60. Hose and Belting.
- 69. Leather.
- 129. Tanning.
- 133. Trunks.

DIVISION XII.—EXAMINER SCHOEPF.

Classes.

- 159. Fire Escapes, and Ladders.
- 57. Hoisting.
- 64. Journals and Bearings.
- 74. Mechanical Powers.
- 100. Presses.

DIVISION XIII.—EXAMINER JAYNE.

Classes.

- 86. Arms and Projectiles. Making
- 59. Chains, Staples, and Horseshoes.
- 53. Hardware-Making.
- 153. Metal Bending and Straightening.
- 10. Metal Bolts, Nuts, Rivets, and Screws.
- 77. Metal Boring and Drilling.
- 78. Metal-Forging.
- 79. Metal Personal Wear. Making.
- 80. Metal-Rolling.
- 76. Metal Tools and Implements. Making
- 134. Metal Tubing and Wire.

DIVISION XIII.—Continued.

- 82. Metal-Turning, Planing, and Milling.
- 85. Nails and Spikes.
- 163. Needles and Pins.
- 164. Punching and Shearing.
- 152. Wagon, Car, and Track Irons.

DIVISION XIV.—EXAMINER STOCKING.

Classes.

- 22. Metal-Founding.
- 150. Packing and Storing Vessels.
- 113. Sheet-Metal Ware. Making
- 140. Wire-Working.

DIVISION XV.—EXAMINER HEDRICK.

Classes.

- 166. Artesian and Oil Wells.
- 106. Artificial Stone, Lime, and Cement.
- 18. Caoutchouc and Minor Plastics.
- 25. Clay and Pottery.
- 154. Composite Roofing.
- 38. Felting and Hats.
- 44. Fuel.
- 49. Glass.
- 87. Oils, Fats, and Glue.
- 92. Paper-Making.
- 94. Paving.
- 62. Refrigeration.
- 127. Sugar and Salt.

DIVISION XVI.—EXAMINER KINTNER.

Class.

- 36. Electricity.

DIVISION XVII.—EXAMINER COOKE.

Classes.

- 11. Book-Binding.
- 93. Paper-Manufactures.
- 101. Printing.

DIVISION XVIII.—EXAMINER FOWLER.

Classes.

- 123. Air and Gas Engines.
- 50. Fluid-Pressure Regulators.
- 162. Injectors and Ejectors.
- 160. Steam and Vacuum Pumps.
- 122. Steam-Boilers.
- 110. Steam-Boiler Furnaces.
- 121. Steam-Engines.
- 136. Steam-Engine Valves.
- 161. Steam Water-Elevators.

DIVISION XIX.—EXAMINER WOODWARD.

Classes.

- 67. Lamps and Gas-Fittings.
- 126. Stoves and Furnaces.

DIVISION XX.—EXAMINER WILKINSON.

Classes.

- 3. Artificial Limbs.
- 16. Builders' Hardware.
- 27. Coffins.
- 30. Cutlery.
- 32. Dentistry.
- 70. Locks and Latches.
- 109. Safes.
- 128. Surgery.

DIVISION XXI.—EXAMINER APPLETON.

Classes.

- 19. Carding.
- 26. Cloth finishing
- 28. Cordage.
- 66. Knitting and Netting.
- 117. Silk.
- 118. Spinning.
- 139. Weaving.

DIVISION XXII.—EXAMINER SEATON.

Classes.

- 9. Boats.
- 147. Coopering.
- 42. Fire-Arms.
- 115. Marine Propulsion.
- 89. Ordnance.
- 102. Projectiles.
- 114. Ships.
- 125. Stone-Working.
- 157. Wheelwright Machines.
- 143. Wood-Sawing.
- 142. Wood-Turning.
- 144. Wood-Working Machines.
- 145. Wood-Working Tools.

DIVISION XXIII.—EXAMINER SEELY.

Classes.

TRADE MARKS—LABELS.

- 33. Drafting.
- 35. Educational Appliances.

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DIVISION XXIII.—Continued.

- 58. Horology.
- 73. Measuring-Instruments.
- 88. Optics.

DIVISION XXIV.—EXAMINER PIERCE.

Classes.

- 165. DESIGNS.
- 2. Apparel.
- 29. Crinoline and Corsets.
- 112. Sewing-Machines.

DIVISION XXV.—EXAMINER MASON.

Classes.

- 13. Brakes and Gins.
- 83. Mills.
- 130. Thrashing.

DIVISION XXVI.—EXAMINER ———.

Class.

Electricity B. (Not yet organized.)

DIVISION XXVII.—EXAMINER GOULD.

Classes.

- 15. Brushing and Scrubbing.
- 43. Fishing and Trapping.
- 46. Games and Toys.
- 51. Grinding and Polishing.
- 68. Laundry.
- 141. Washing Apparatus.

DIVISION XXVIII.—FIRST ASSISTANT
EXAMINER GALLATIN IN CHARGE.*Classes.*

- 34. Driers.
- 168. Farriery.
- 81. Metal-Working Tools.
- 151. Nut and Bolt Locks.
- 98. Pneumatics.
- 120. Stationery.
- 170. Wind-Wheels.

PRICE-LIST

OF THE

PUBLICATIONS OF THE UNITED STATES PATENT OFFICE.

Official Gazette: Published every Tuesday; in two volumes a year, prior to July, 1883, subsequent to that date in quarterly volumes.

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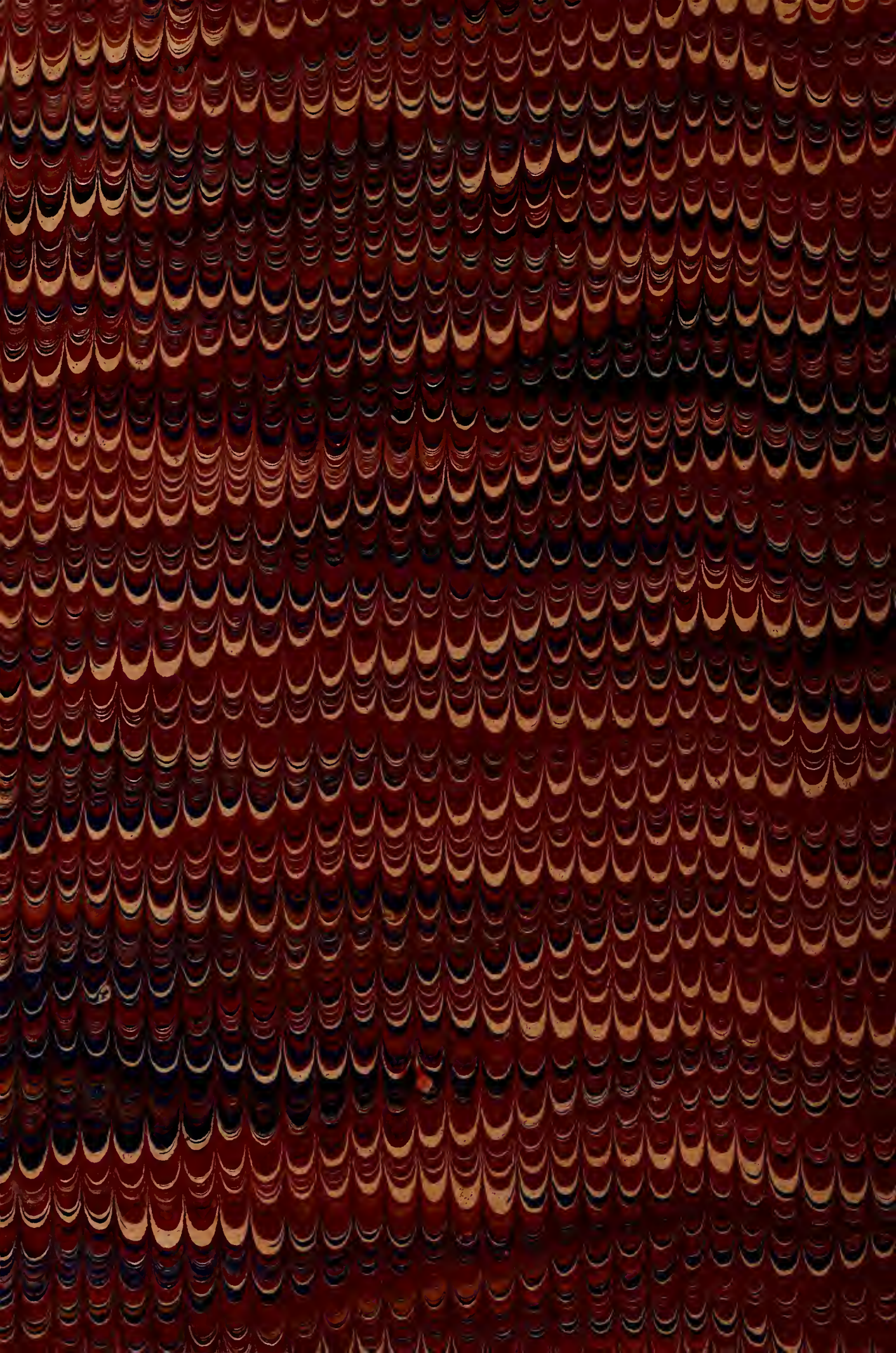
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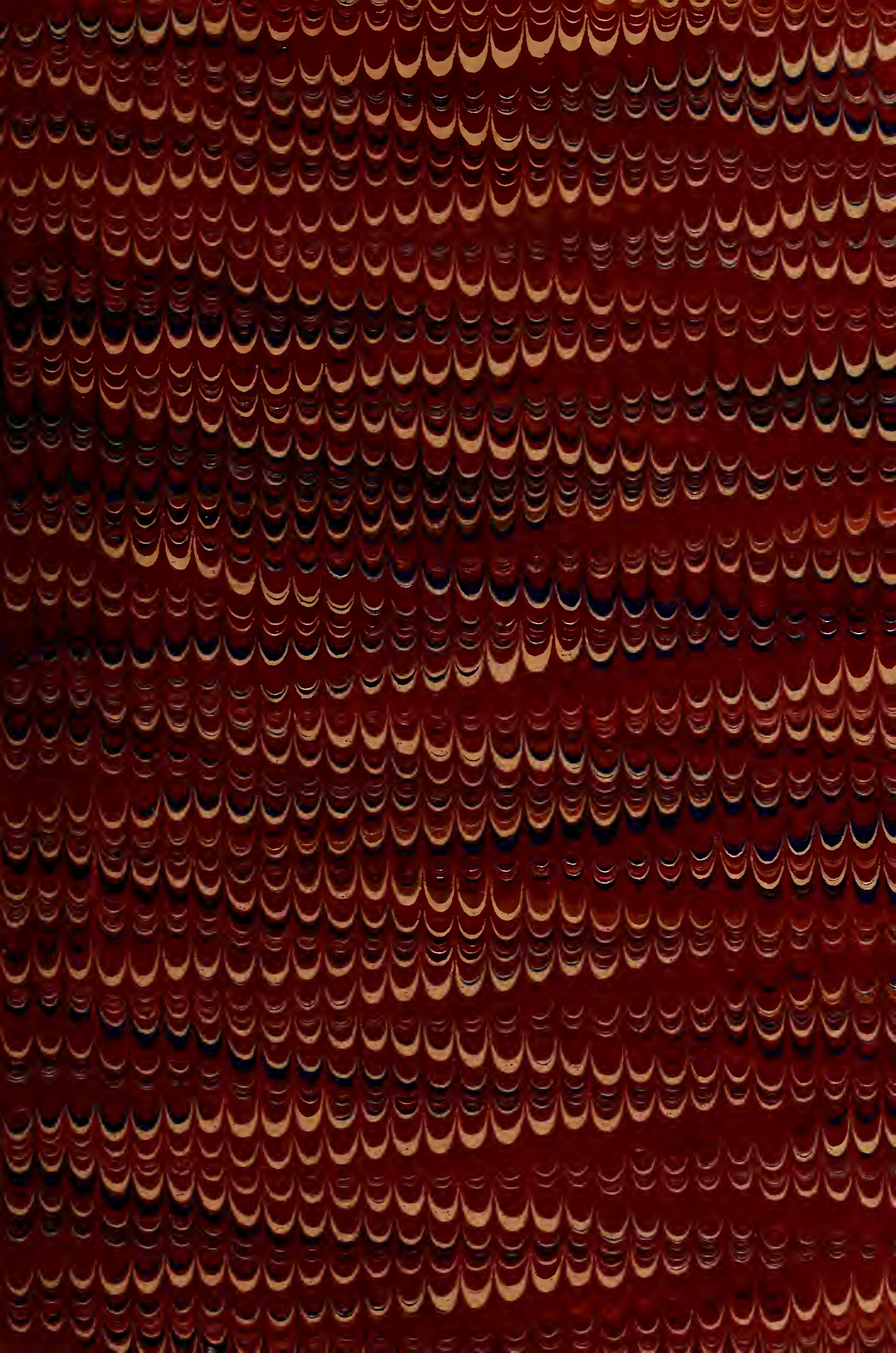
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